



American Red Cross
Training Services

Evaluating Water Competency Skill Attainment for Children

Research conducted by the
American Red Cross

With financial and technical support from the
Centers for Disease Control and Prevention and
National Network of Public Health Institutes

Research Study Overview

- Beginning in December 2020 through July 2021, the American Red Cross conducted a 2-phase research study to examine:
 - Barriers to accessing swim lessons and water safety information among populations of children at higher risk of drowning (Phase 1).
 - Ages (estimated) that young children may acquire unsupported swim skills through developmentally appropriate group swim lessons (Phase 2).
 - This phase of the study was conducted in communities with populations at higher risk of drowning.
- Funding for this initiative was provided to the National Network of Public Health Institutes (NNPHI) through a Cooperative Agreement with the Centers for Disease Control and Prevention (CDC – 6 NU38OT000303-03-01, CFDA 93.421). NNPHI and the Red Cross collaborated with the CDC's National Center for Injury Prevention and Control on this initiative.
- This report contains the findings of Phase 2 of this project. Phase 1 findings are provided in a separate report.



Background

- Among young children ages 1 to 4, drowning is the leading cause of fatal injuries in the United States (CDC, 2020).
- Research indicates that an association exists between young children's participation in swimming lessons and a decreased risk of drowning deaths (Brenner, Taneja, Haynie, Trumble, Qian, et al., 2009).
- The American Academy of Pediatrics (AAP) recommends that children be “developmentally ready” for formal swimming lessons based not only the child's age, but many “physical, social, behavioral, emotional, and cognitive skills balanced against the environmental risk of drowning” (Denny et al., 2021, p. 12).
- Still, the AAP cites evidence that children ages 2 to 4 can acquire the motor skills needed for swimming, and that most children are developmentally ready for swimming by 4.5 years of age.

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Background *(Continued)*

- Central to this study is the concept of water competency.
- This study focused on the water skills derived from the American Red Cross definition of water competency (Quan, et al., 2014), which includes the following:
 - Entry with total submersion
 - Recovery to the surface and remaining there for at least 1 minute using floating or treading
 - Change in body orientation to allow repositioning, turning at least 180° and facing toward an exit direction
 - Propulsion, including leveling off and moving on front and/or on back position for at least 25 yards/meters
 - Exit from the water



Gaps

- There is a lack of sufficient evidence related to the age at which children are able to achieve unsupported swimming behaviors.
- There is a lack of evidence evaluating swim lesson programs for young children that specifically examines the skills that lead to water competence through the progressions of the program.
- Phase 2 of this study conducted by the American Red Cross sought to help fill these research and evidence gaps.



Significance

- Phase 2 evaluated a specific swim lesson education program for young children (ages 1 to 5 years) and examined the skills that lead to water competence through the progression of the program.
 - The selected skills are key water competence components aimed at gaining unsupported swimming behaviors.
 - The components of water competence have different levels of behavior. The beginning levels are supported behaviors (i.e., physically supported by a caregiver, instructor, shallow water or a flotation device) and more advanced levels are unsupported behaviors (i.e., no physical support).



Research Purpose and Questions

- The purpose of the Phase 2 research was to determine at what developmentally appropriate ages it is reasonable for young children to acquire unsupported swimming behaviors.
- Outcomes from the study may impact the future design and delivery of swim instruction.

Phase 2 Research Questions:

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?
2. Across these 5 water competence components, what degree of improvement can be attained in an 8-lesson session?



Methodology

- An 8-lesson swim session was conducted at 2 locations in central and south Florida.
- Inclusion criteria were as follows: (1) a child aged 1 to 5 years; (2) informed consent from the parent or caregiver; and (3) minimum attendance of 4 lessons (Research Question 2 only).
- Parent and Child Aquatics (PCA) and Preschool Aquatics (PSA) levels of the program were presented.
 - PCA is designed as an in-water parent/caregiver-assisted experience for children ages 1 to about 3 years old.
 - PSA is designed for children about 4 to 5 years old, without their parent/caregiver in the water.
- Parents/caregivers self-selected either the PCA or PSA sessions in which to enroll their child(ren).
- Two versions of the Red Cross PCA and PSA courses were presented to participants (A = Typical, B = Modified)
 - Modifications aimed to encourage earlier introduction of the five selected unsupported water competence components at both PCA and PSA levels.
 - Parents/caregivers were not aware in which version, A or B, their child was assigned.

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Methodology *(Continued)*

- Participants were recruited through local connections by program operators/aquatic managers.
- Participants received an additional session of swim lessons as an incentive.
- Parents/caregivers were presented with pre and post surveys to assess past experiences with swim lessons and water safety, as well as basic demographics.
- Swim skills performed by children 1 to 5 years old were assessed in a pre and post design by members of the research team using five water competence components.
- All swim sessions were video recorded to assess validity and reliability of the instrument, interpretation and future analysis.



Data Analysis

▪ Data Collection

- Two methods were employed for assigning developmental steps to children's swimming behavior.
 - The primary mode of data collection was live observation on Day 1 and Day 8.
 - The secondary mode employed for those individuals who were absent on Day 1 or Day 8 used video from their first and/or last days of attendance.

▪ Reliability and Objectivity

- Observer objectivity was established by comparing the live observation data steps with independent observations from the video recordings.
 - Observer objectivity was calculated using proportion of exact agreement (P), with a minimum acceptable criterion of $P > .80$.
 - Based on a random sample comparing live observation with video, $P = .90$.
- Consistency of the behavior was established by using video and assigning developmental steps based on a sample of day-to-day behavior.

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Data Analysis *(Continued)*

- **Water Competence Developmental Steps**
 - Each child swimming's behavior was assessed for five separate developmental water competence components:
 - Water entry (WE)
 - Water exit (WX)
 - Back float (BF)
 - Breath control (BC)
 - Change in body orientation (CBO)
- **Additional Variable Definitions**
 - Max step: the highest development step demonstrated by each child for each of the five water competence components
 - Unsupported/supported behavior: A binary variable to indicate observed skill level based on the multiple-assessment criteria (see next slide)

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Data Analysis *(Continued)*

Explanation of the Assessment Instrument

Blue represents the Step(s) of “Unsupported Behavior Demonstrated”

Water Entry Component Sequence (WE)

1. No voluntary entry demonstrated
2. Caregiver- or flotation-supported feet-first entry
3. **Unassisted voluntary feet-first entry**

Water Exit Component Sequence (WX)

1. No voluntary exit demonstrated
2. Caregiver-supported exit to pool side
3. Flotation-supported or caregiver-assisted exit to pool side
4. **Independent exit to pool side**
5. **Independent exit to pool side and exit from pool (over side, up stairs or ramp or ladder)**

Back (Supine) Buoyancy/Flotation Component Sequence (BF)

1. No back flotation demonstrated
2. Back flotation with caregiver/instructor support
3. Back flotation with instructional flotation device support
4. Momentary (1-3 sec.) voluntary back flotation
5. **Independent (>3 sec.) voluntary back flotation**

Breath Control Component Sequence (BC)

1. Reflexive breath holding when face is voluntarily submerged
2. Allowing water voluntarily in and/or around mouth, resulting in shipping or spouting
3. Voluntary partial facial submersion (mouth and/or nose)
4. Voluntary full head submersion
5. **Repeated voluntary submersion/breath-holding in water**
6. **Extended voluntary breath holding and/or repeated rhythmic breathing with water safety skills**

Change in Body Orientation (turning around while vertical) Component Sequence (CBO)

1. No change in body orientation demonstrated
2. Caregiver/instructor-supported body orientation change (turning around)
3. Body orientation change (turning around) while supported by flotation device
4. **Independent voluntary body orientation change (turning around)**

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Data Analysis *(Continued)*

- Research Question 1:
 - Max step is coded dichotomously to supported or unsupported behaviors based on indicators of each competency.
 - 100% stacked bar chart of all assessment criteria illustrate the number of participants at each step.
 - Modified developmental curves (Robertson, et al., 1980) indicated frequency of unsupported behavior demonstrated by participants.
 - Development curves are split based on PCA and PSA groups.



Data Analysis *(Continued)*

- Research Question 2:
 - Based on step change from pre to post assessment
 - 100% stacked bar chart of pre and post assessment scores:
 - Illustrate the number of participants at each step
 - Classify the presence of supported and unsupported behaviors as binary outcomes
 - Present PCA and PSA group behaviors separately
 - Average improvement in pre and post assessment scores were calculated for each assessment criterion.
 - Calculation was also completed based on separate PCA and PSA groups.
 - Wilcoxon Signed-Rank test evaluated the statistical significance of pre and post changes.
 - Mann-Whitney U test evaluated the statistical significance of pre and post change between A and B groups.



Data Summary – Participation

- Target sample size of 96 to 128 adult/child pairs or children (based on minimum and maximum class size allowable by program design)
- 99 children were enrolled in lessons
- 74 children participated in at least 1 class
- 71 children had either pre and/or post assessment data
- Among those with documented Institutional Review Board (IRB) consent and criteria (e.g., 1 to 5 years old):
 - 60 children with pre and/or post data (“max step” data) for Research Question 1
 - 45 children with pre and post data for Research Question 2

Note: An additional inclusion criteria for Research Question 2 (e.g., both pre and post scores were required) reduced the sample size.



Participant Profile: Swimming-Related

Parental Rating of Child's Swim Skill Level

	PCA	PSA	All
Non-Swimmer	24	22	46
Beginner swimmer	7	7	14
Intermediate swimmer	0	1	1
Total	31	30	61

Parental Report of Child's Prior Swim Lesson Experience

	PCA	PSA	All
Yes	1	7	8
No	31	24	55
Total	32	31	65

PCA – Parent and Child Aquatics
PSA – Preschool Aquatics



Participant Profile: Age and Gender Identity

Child's Age

	PCA	PSA	All
1 to 1.9 years	13	1	14
2 to 2.9 years	17	2	19
3 to 3.9 years	2	9	11
4 to 4.9 years		13	13
5 to 5.9 years		6	6
Total	32	31	63

Child's Gender Identity

	PCA	PSA	All
Male	17	17	34
Female	15	14	29
Total	32	31	63

PCA – Parent and Child Aquatics
PSA – Preschool Aquatics



Participant Profile: Race and Ethnicity

Child's Race

	PCA	PSA	All
White	9	7	16
Black	7	11	18
American Indian or Alaska Native	0	0	0
Asian or Pacific Islander	0	0	0
Other	2	2	4
Prefer not to say	0	0	0
Total	18	20	38

Hispanic or Latino Children

	PCA	PSA	All
Yes	3	5	8
No	14	15	29
Total	17	20	37

PCA – Parent and Child Aquatics
PSA – Preschool Aquatics



Participant Profile: Family Income

	PCA	PSA	All
Less than \$15,000	1	3	4
\$15,000–\$24,999	2	0	2
\$25,000–\$34,999	7	1	8
\$35,000–\$44,999	0	3	3
\$45,000–\$54,999	4	2	6
\$55,000–\$74,999	1	1	2
\$75,000–\$99,999	1	3	4
\$100,000 or more	0	2	2
Prefer not to answer	1	4	5
Total	17	19	36

PCA – Parent and Child Aquatics
PSA – Preschool Aquatics



Research Results Overview

Research Question 1

At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

- The youngest child age category at which unsupported water entry and water exit was demonstrated was 1 to 1.9 years old.
- The youngest child age category to demonstrate unsupported breath control, back flotation/buoyancy, and changing body orientation was 2 to 2.9 years old.

Research Question 2

Across these 5 water competence components, what degree of improvement can be attained in an 8-lesson session?

- The greatest improvement occurred in water exit ($M = 1.61$), followed by breath control ($M = 0.80$), back flotation/buoyancy ($M = 0.57$), water entry ($M = 0.48$), and changing body position and orientation ($M = 0.48$).
- Across all five components, improvements from pre to post test were statistically significant.
- No significant differences in average improvement were detected between A and B groups *except* for water entry, where B group's improvement was lower ($P < .005$).

M = Mean



Research Question 1 Results

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Score of...	Water Entry 3	Water Exit 4	Breath Control 5	Back Float 5	Change in Body Orient. 4
...meaning:	Unassisted voluntary feet-first entry	Independent exit to side	Repeated voluntary submersion/breath- holding in water	Independent (>3 sec.) voluntary back flotation	Independent voluntary body orientation change (turning around)
ALL					
Count	38	38	10	6	9
Minimum age	1.6	1.6	2.8	2.9	2.9
Average age	3.4	3.5	4.0	4.2	4.0
PCA					
Count	17	17	3	-	2
Minimum age	1.6	1.6	2.8	-	2.9
Average age	2.4	2.5	3.0	-	3.2
PSA					
Count	21	21	7	6	7
Minimum age	2.0	3.0	3.0	2.9	3.0
Average age	4.3	4.4	4.4	4.2	4.3

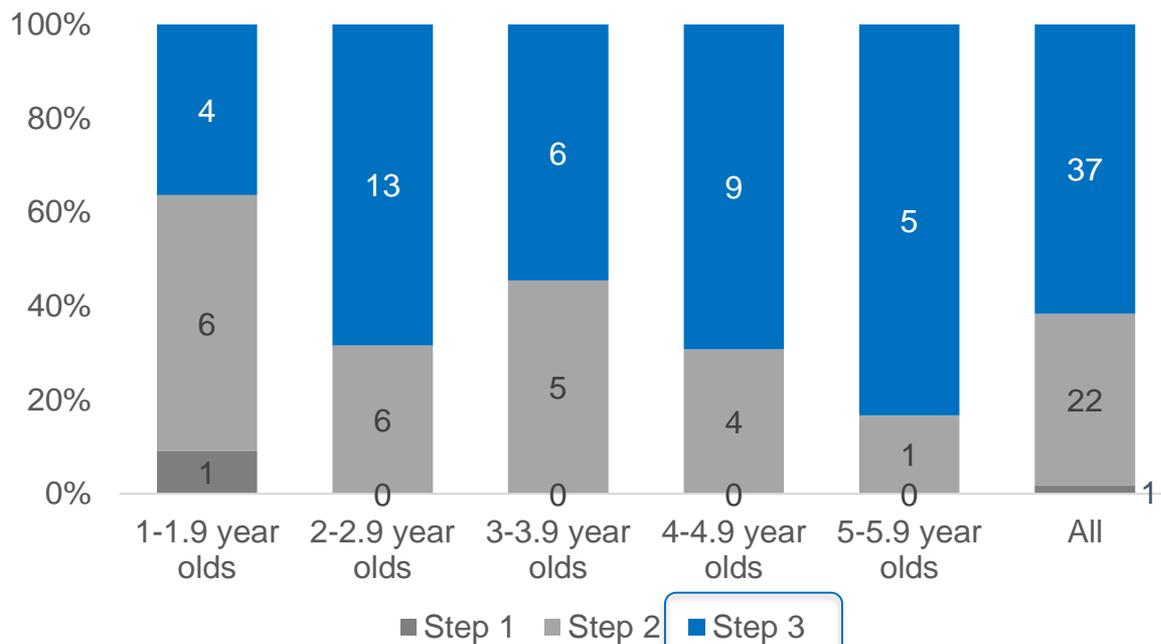


Research Question 1 Results

Water Entry

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Number of Participants by Step, as Percent of Group



- Water Entry Component Sequence**
1. No voluntary entry demonstrated
 2. Caregiver- or flotation-supported feet-first entry
 3. Unassisted voluntary feet-first entry

 Indicates step at which the behavior is demonstrated unsupported

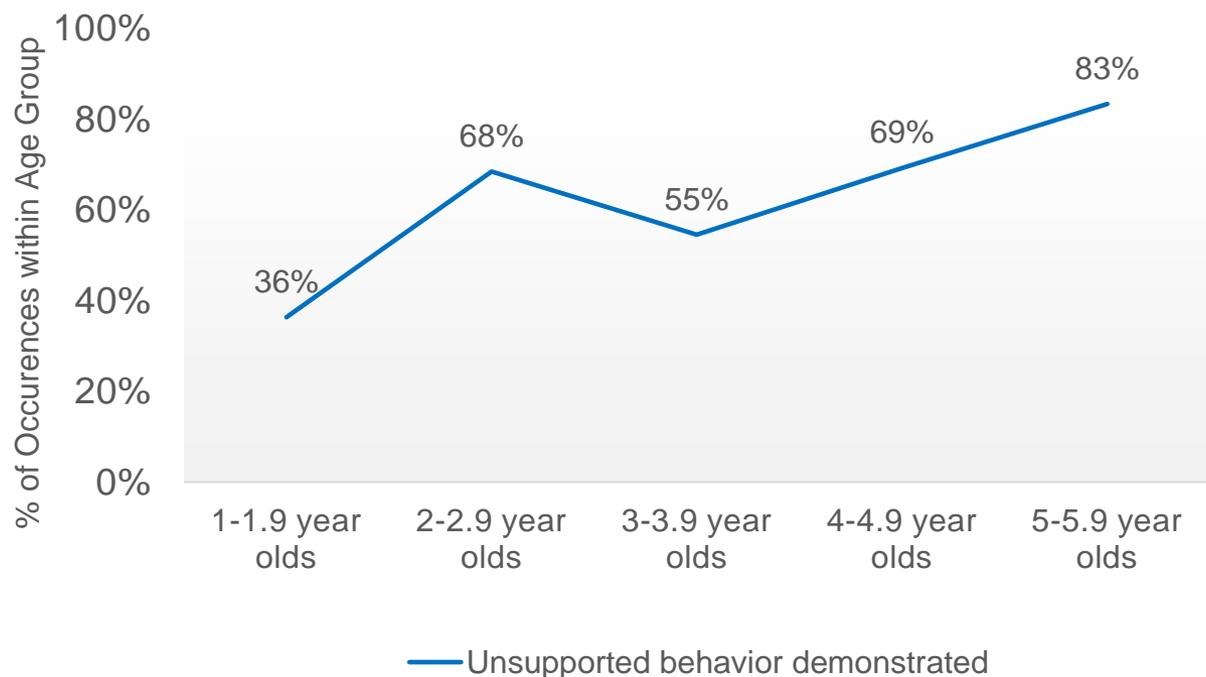


Research Question 1 Results

Water Entry

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Water Entry Across Ages



Water Entry Component Sequence

1. No voluntary entry demonstrated
2. Caregiver- or flotation-supported feet-first entry
3. **Unassisted voluntary feet-first entry**

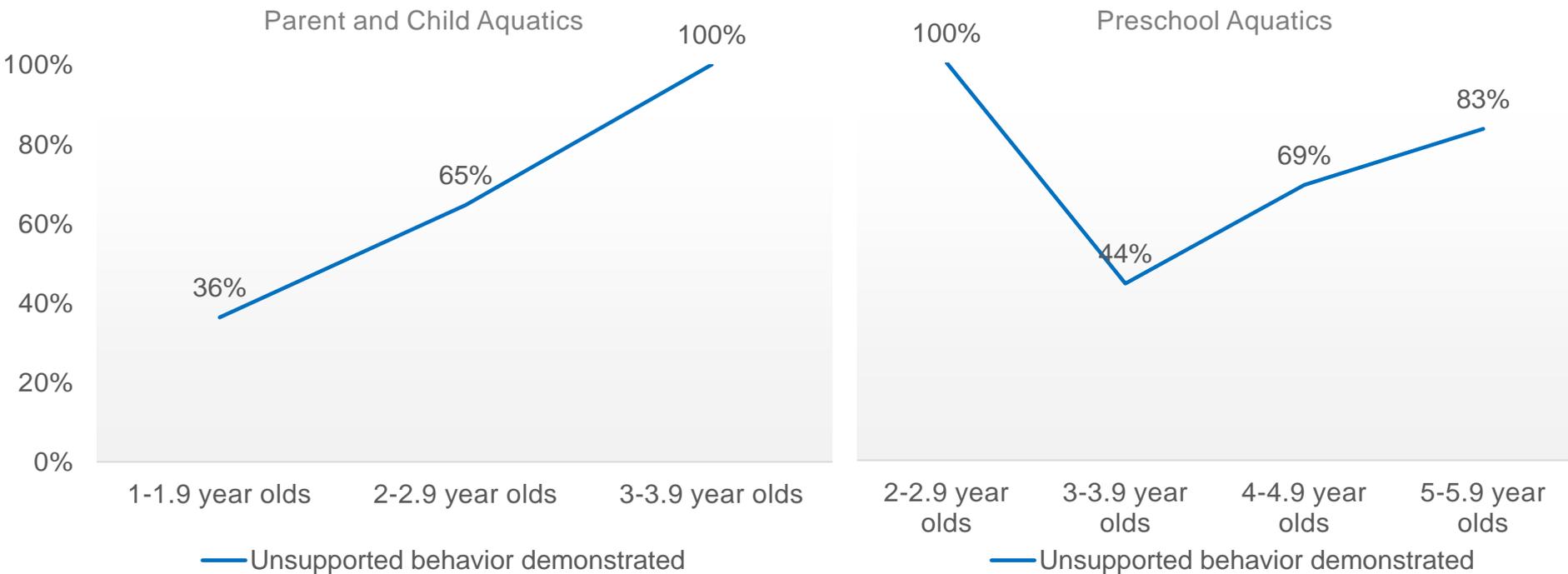


Research Question 1 Results

Water Entry

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Water Entry Across Ages and Groups

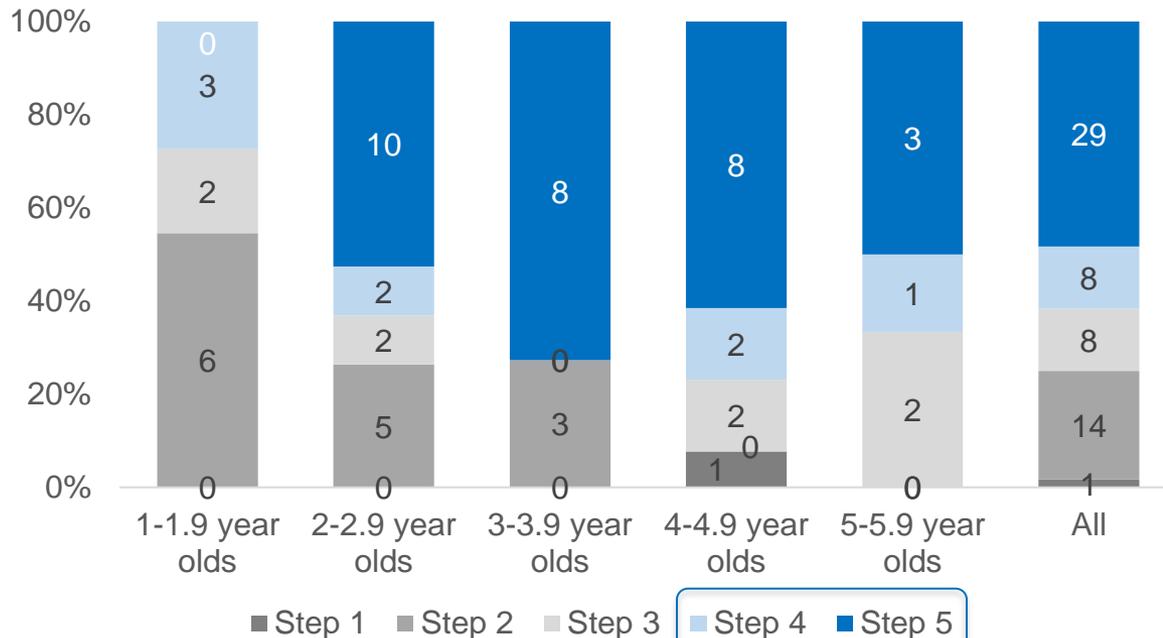


Research Question 1 Results

Water Exit

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Number of Participants by Step, as Percent of Group



Water Exit Component Sequence

1. No voluntary exit demonstrated
2. Caregiver-supported exit to pool side
3. Flotation-supported or caregiver-assisted exit to pool side
4. Independent exit to pool side
5. Independent exit to pool side and exit from pool (over side, up stairs or ramp or ladder)

 Indicates steps at which the behavior is demonstrated independently

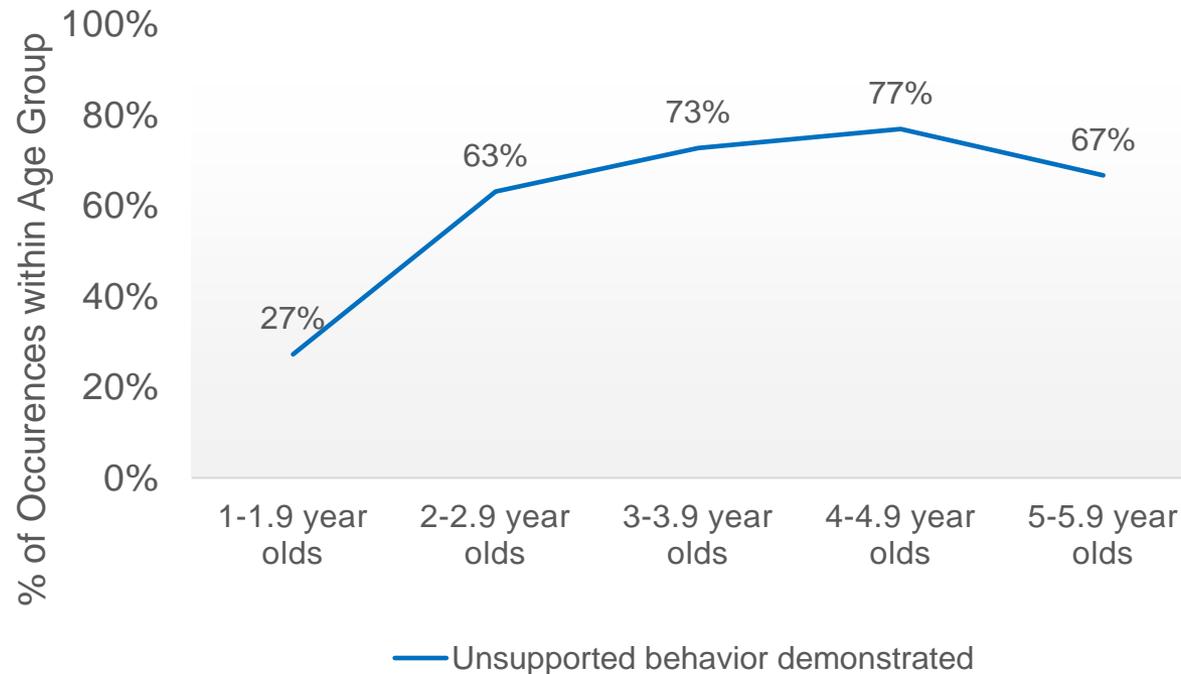


Research Question 1 Results

Water Exit

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Water Exit Across Ages



Water Exit Component Sequence

1. No voluntary exit demonstrated
2. Caregiver-supported exit to pool side
3. Flotation-supported or caregiver-assisted exit to pool side
4. Independent exit to pool side
5. Independent exit to pool side and exit from pool (over side, up stairs or ramp or ladder)

Research Question 1 Results

Water Exit

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Water Exit Across Ages and Groups

Parent and Child Aquatics

Preschool Aquatics

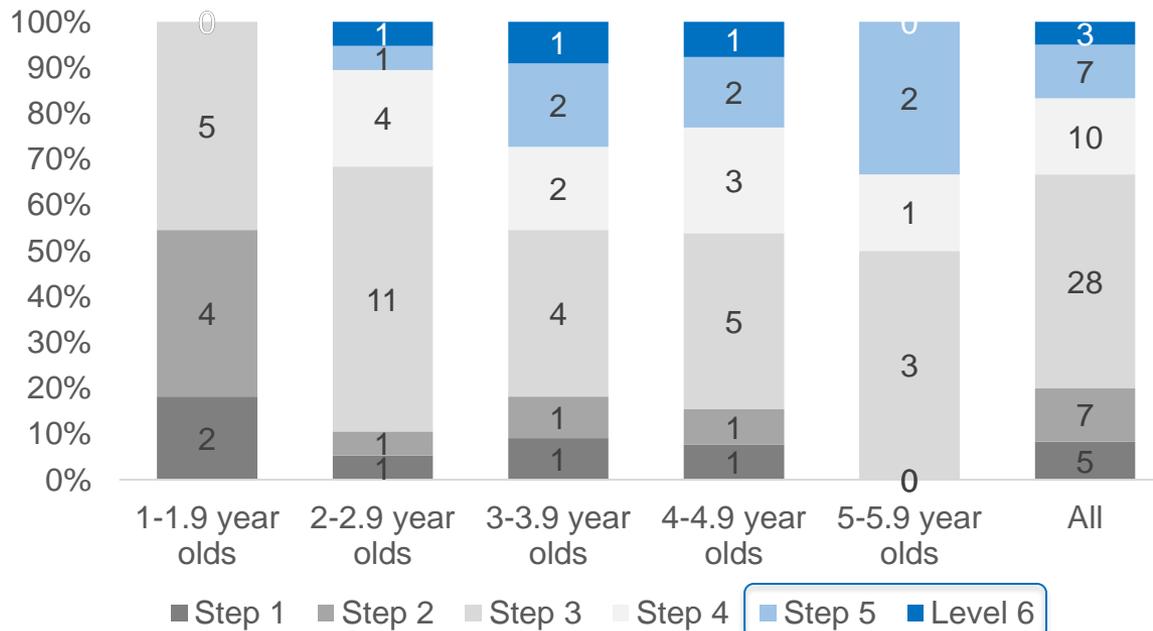


Research Question 1 Results

Breath Control

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Number of Participants by Step, as Percent of Group



Breath Control Component Sequence

1. Reflexive breath holding when face is voluntarily submerged
2. Allowing water voluntarily in and/or around mouth resulting in shipping or spouting
3. Voluntary partial facial submersion (mouth and/or nose)
4. Voluntary full head submersion
5. Repeated voluntary submersion/breath-holding in water
6. Extended voluntary breath holding and/or repeated rhythmic breathing with water safety skills

 Indicates steps at which the behavior is demonstrated independently

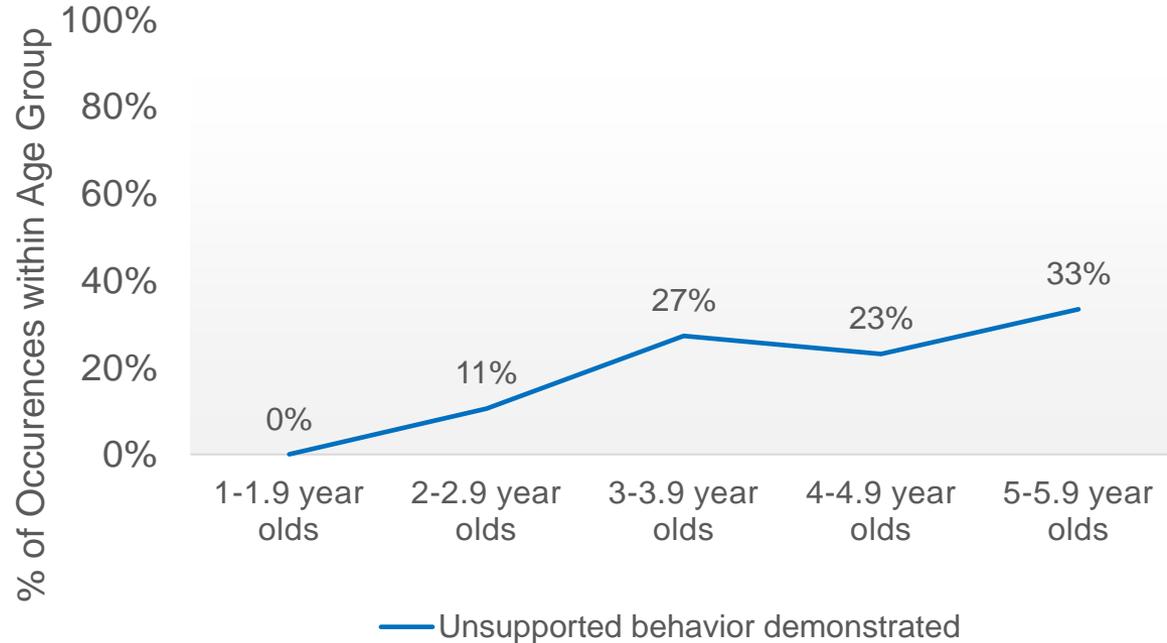


Research Question 1 Results

Breath Control

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Breath Control Across Ages



Breath Control Component Sequence

1. Reflexive breath holding when face is voluntarily submerged
2. Allowing water voluntarily in and/or around mouth resulting in shipping or spouting
3. Voluntary partial facial submersion (mouth and/or nose)
4. Voluntary full head submersion
5. Repeated voluntary submersion/breath-holding in water
6. Extended voluntary breath holding and/or repeated rhythmic breathing with water safety skills



Research Question 1 Results

Breath Control

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Breath Control Across Ages and Groups

Parent and Child Aquatics

Preschool Aquatics

100%

80%

60%

40%

20%

0%

1-1.9 year olds 2-2.9 year olds 3-3.9 year olds

— Unsupported behavior demonstrated

50%

12%

0%

2-2.9 year olds 3-3.9 year olds 4-4.9 year olds 5-5.9 year olds

— Unsupported behavior demonstrated

22%

23%

0%

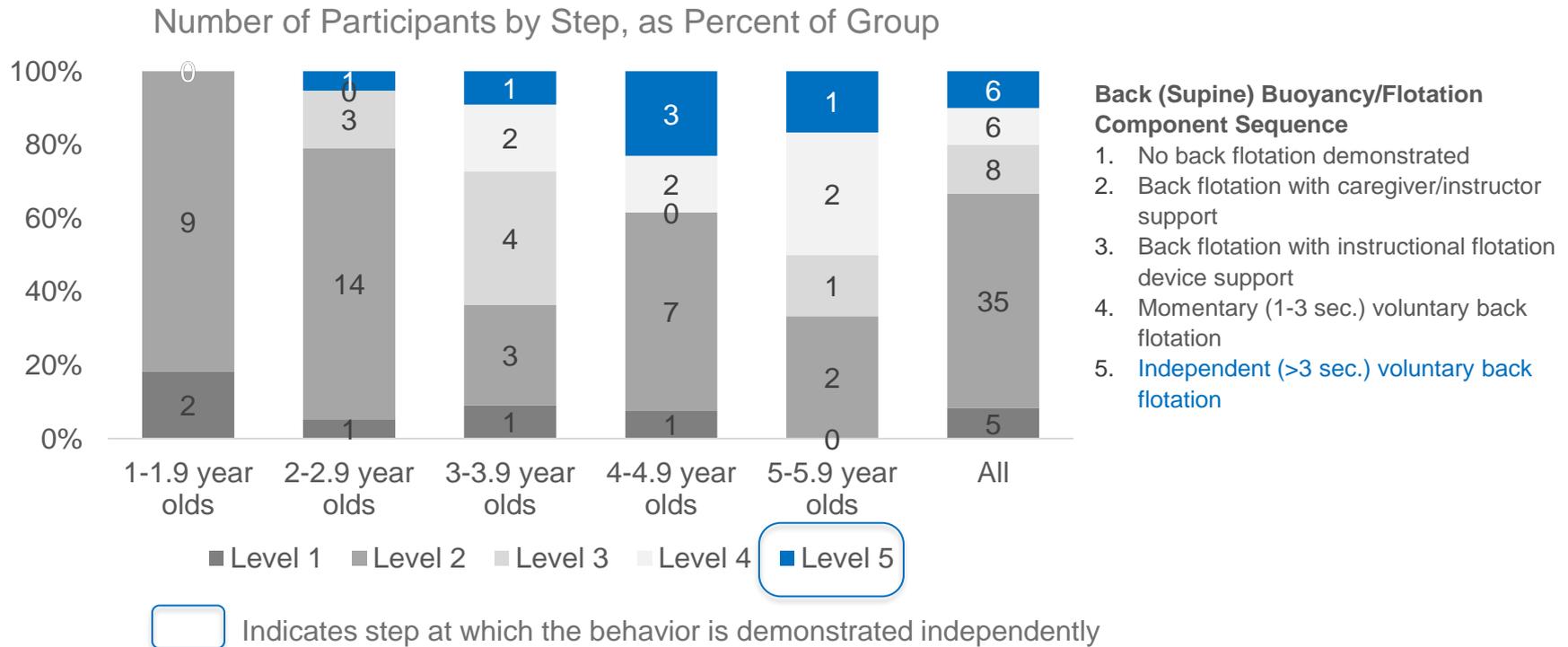
33%



Research Question 1 Results

Back Flotation

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?



Back (Supine) Buoyancy/Flotation Component Sequence

1. No back flotation demonstrated
2. Back flotation with caregiver/instructor support
3. Back flotation with instructional flotation device support
4. Momentary (1-3 sec.) voluntary back flotation
5. Independent (>3 sec.) voluntary back flotation

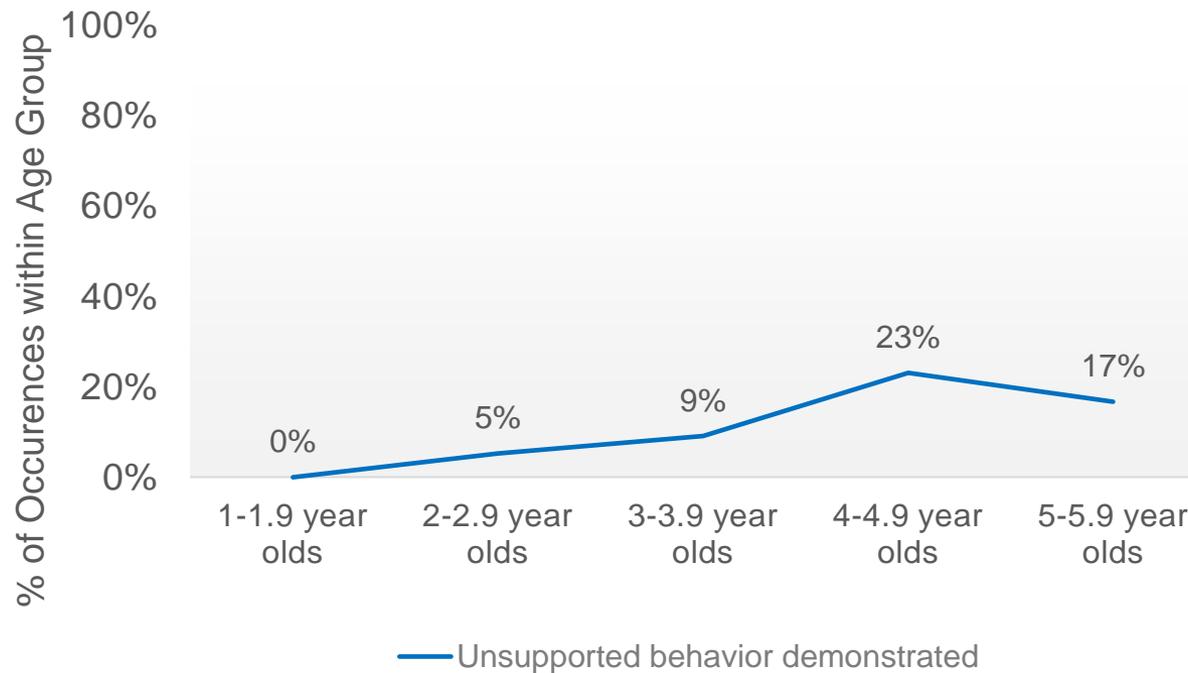


Research Question 1 Results

Back Flotation

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Back Float Across Ages



Back (Supine) Buoyancy/Flotation Component Sequence

- No back flotation demonstrated
- Back flotation with caregiver/instructor support
- Back flotation with instructional flotation device support
- Momentary (1-3 sec.) voluntary back flotation
- Independent (>3 sec.) voluntary back flotation



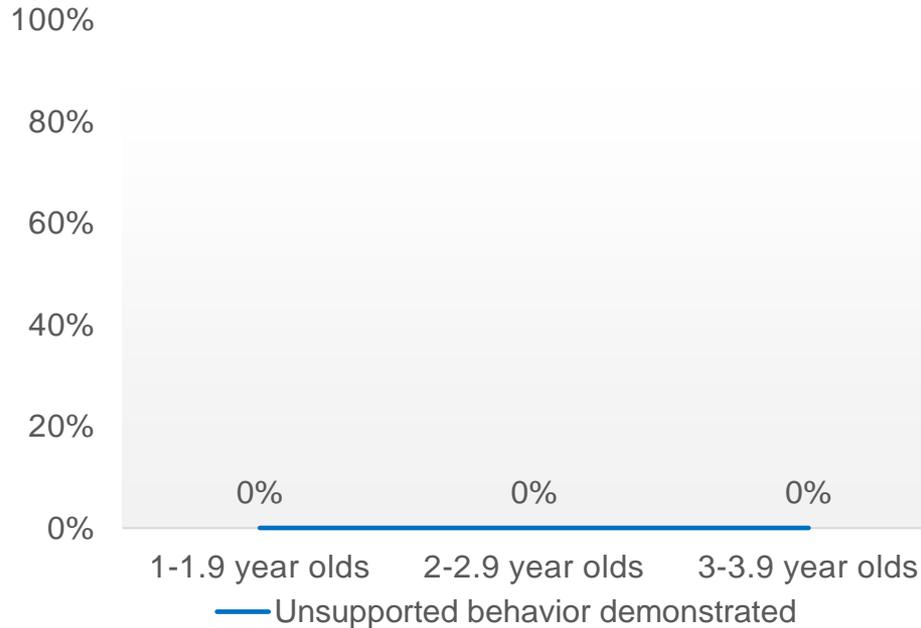
Research Question 1 Results

Back Flotation

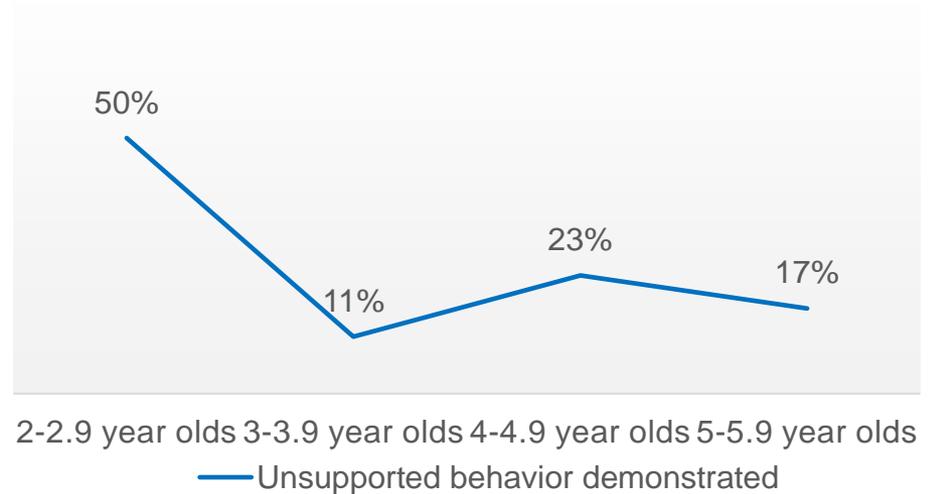
1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Back Float Across Ages and Group

Parent and Child Aquatics



Preschool Aquatics

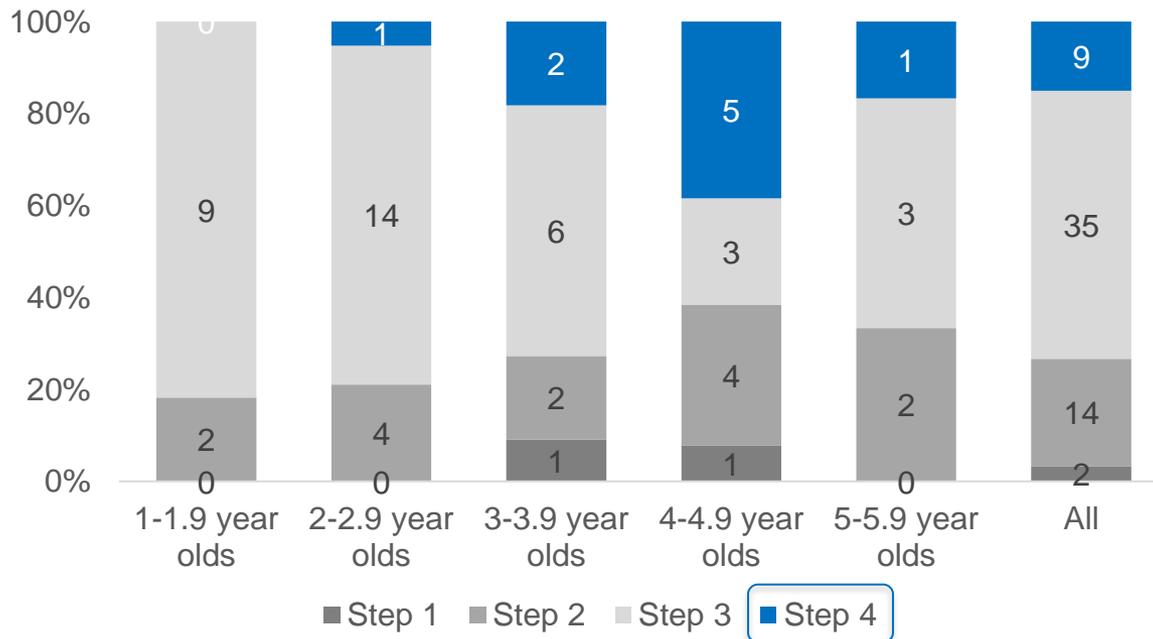


Research Question 1 Results

Change in Body Orientation

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Number of Participants by Step, as Percent of Group



- Change in Body Orientation** (turning around while vertical) **Component Sequence**
1. No change in body orientation demonstrated
 2. Caregiver/instructor-supported body orientation change (turning around)
 3. Body orientation change (turning around) while supported by flotation device
 4. Independent voluntary body orientation change (turning around)

Step 4 Indicates step at which the behavior is demonstrated independently

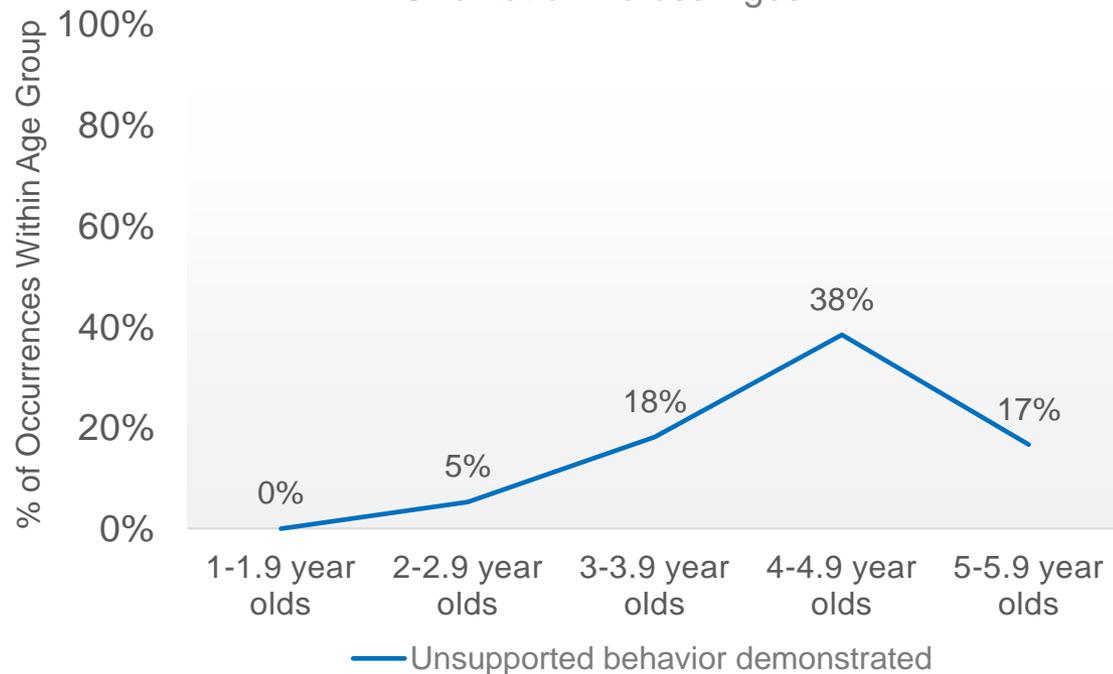


Research Question 1 Results

Change in Body Orientation

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Change in Body Position Orientation Across Ages



Change in Body Orientation (turning around while vertical) **Component Sequence**

1. No change in body orientation demonstrated
2. Caregiver/instructor-supported body orientation change (turning around)
3. Body orientation change (turning around) while supported by flotation device
4. Independent voluntary body orientation change (turning around)



Research Question 1 Results

Change in Body Orientation

1. At what ages can unsupported swimming behaviors for water competence components of water entry and exit, breath control, back flotation/buoyancy, and changing body position and orientation be demonstrated?

Frequency of Unsupported Change in Body Orientation Across Ages and Groups

Parent and Child Aquatics

Preschool Aquatics

100%

80%

60%

40%

20%

0%

1-1.9 year olds 2-2.9 year olds 3-3.9 year olds

— Unsupported behavior demonstrated

2-2.9 year olds 3-3.9 year olds 4-4.9 year olds 5-5.9 year olds

— Unsupported behavior demonstrated

0% 6% 50%

0% 11% 38% 17%

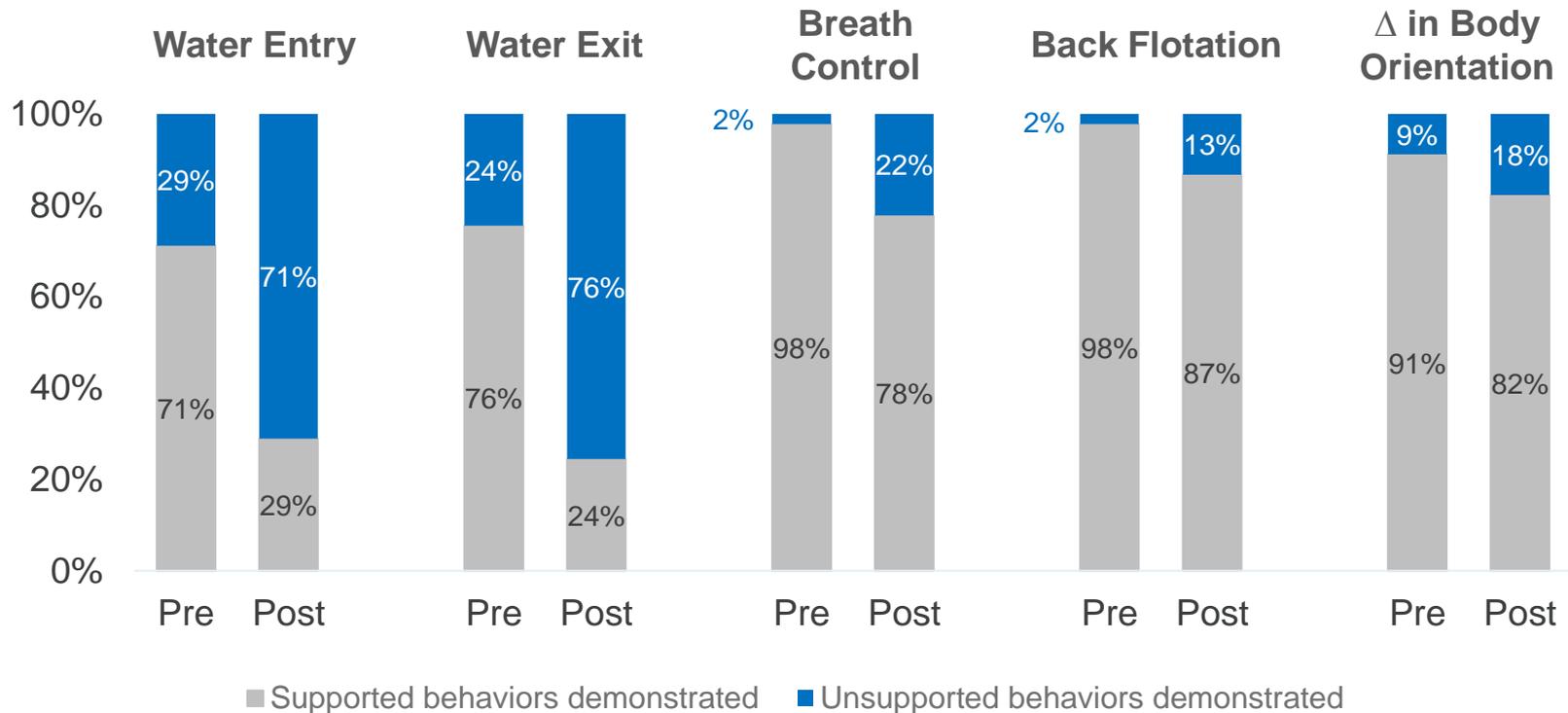


Research Question 2 Results

Pre and Post Program Unsupported Skill Summary

2. Across these 5 water competence components, what degree of improvement was attained in an 8-lesson session? (Average attendance: 6.9 sessions)

All Children, as Percent of Occurrence

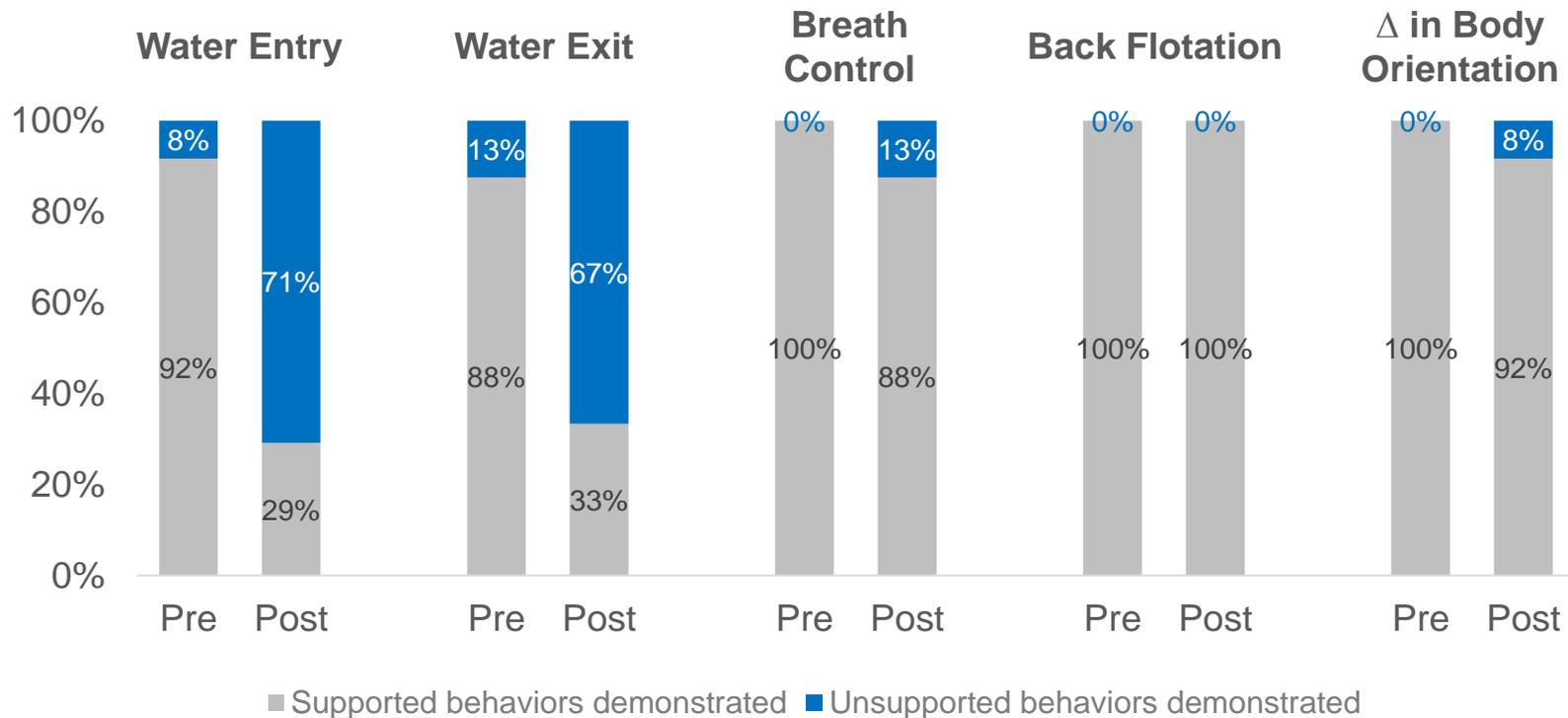


Research Question 2 Results

Pre and Post Program Unsupported Skill Summary

2. Across these 5 water competence components, what degree of improvement was attained in an 8-lesson session? (Average attendance: 6.9 sessions)

Parent and Child Aquatics, as Percent of Occurrence

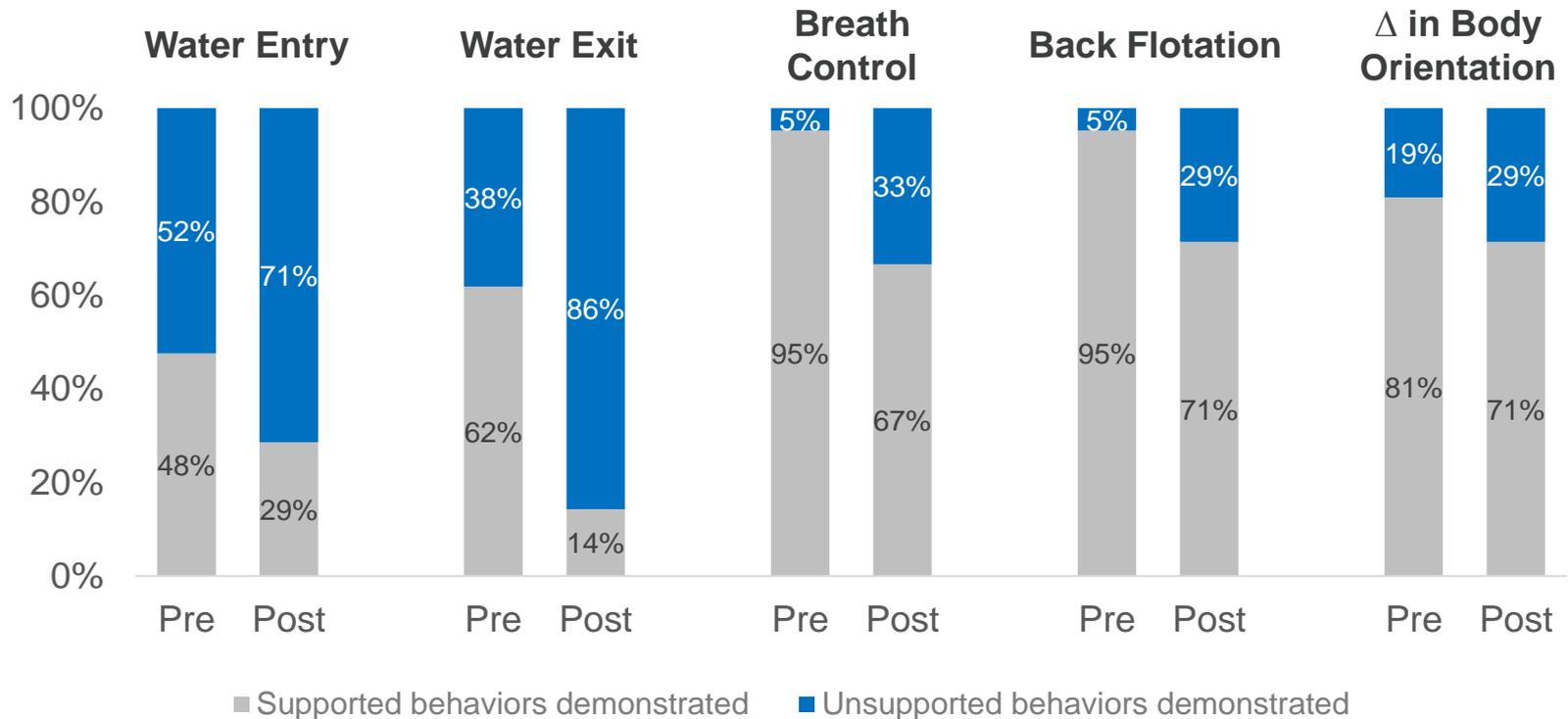


Research Question 2 Results

Pre and Post Program Unsupported Skill Summary

2. Across these five water competence components, what degree of improvement was attained in an 8-lesson session? (Average attendance: 6.9 sessions)

Preschool Aquatics, as Percent of Occurrence



Research Question 2 Results

2. Across these 5 water competence components, what degree of improvement was attained in an 8-lesson session? (Average attendance: 6.9 sessions)

	Average Change (Δ)				
	Water Entry	Water Exit	Breath Control	Back Float	Change Body Orientation
All					
1-1.9 year olds	0.75	0.50	0.25	0.00	0.38
2-2.9 year olds	0.69	2.13	0.81	0.25	0.50
3-3.9 year olds	0.33	1.78	0.89	1.22	0.56
4-4.9 year olds	0.22	1.44	1.11	0.56	0.44
5-5.9 year olds	0.00	2.00	1.33	2.00	0.33
Average	0.49	1.62	0.82	0.58	0.47
PCA					
1-1.9 year olds	0.75	0.50	0.25	0.00	0.38
2-2.9 year olds	0.64	2.43	0.86	0.07	0.43
3-3.9 year olds	1.00	2.00	0.50	1.50	0.50
Average	0.71	1.75	0.63	0.17	0.42
PSA					
2-2.9 year olds	1.00	0.00	0.50	1.50	1.00
3-3.9 year olds	0.14	1.71	1.00	1.14	0.57
4-4.9 year olds	0.22	1.44	1.11	0.56	0.44
5-5.9 year olds	0.00	2.00	1.33	2.00	0.33
Average	0.24	1.48	1.05	1.05	0.52



Notes:

- PCA – Parent and Child Aquatics; PSA – Preschool Aquatics
- Levels do not reflect continuous variables, e.g., progression from a 2 to a 3 level on Breath Control may not represent an equivalent level of progression as growth from a level 3 to a 4

Research Question 2 Results

2. Across these 5 water competence components, what degree of improvement was attained in an 8-lesson session? (Average attendance: 6.9 sessions)

Wilcoxon Signed-Rank Results

Used to evaluate differences in ordinal, matched-pair (pre/post) data

Component	Mean, Standard Deviation (M, SD) ^a		Z	p
	Pre	Post		
Water Entry	2.22 (0.56)	2.71 (0.49)	-4.69	< .001***
Water Exit	2.62 (0.86)	4.24 (1.15)	-5.17	< .001***
Breath Control	2.69 (0.90)	3.51 (1.20)	-4.4	< .001***
Back Flotation	2.16 (0.74)	2.73 (1.12)	-3.45	.001**
Change in Body Orientation	2.49 (0.73)	2.96 (0.64)	-3.87	<0.001***

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$



Research Question 2 Results

2. Across these 5 water competence components, what degree of improvement was attained in an 8-lesson session? (Average attendance: 6.9 sessions)

Mann Whitney U Test

Used to evaluate differences in average change between A & B groups

All Children	Average (M) Change			U	p
	All (n = 45)	A (n = 23)	B (n = 22)		
Water Entry	0.49	0.70	0.27	146	.005**
Water Exit	1.62	1.65	1.59	232	.621
Breath Control	0.82	0.78	0.86	242	.788
Back Float	0.58	0.35	0.82	192.5	.113
Change in Body Orientation	0.47	0.52	0.41	217.5	.363

Indian River Participants	Average (M) Change			U	p
	All (n = 33)	A (n = 19)	B (n = 14)		
Water Entry	0.55	0.74	0.29	73	.011*
Water Exit	1.52	1.58	1.43	121	.648
Breath Control	0.85	0.84	0.86	118	.577
Back Float	0.39	0.26	0.57	118	.444
Change in Body Orientation	0.52	0.58	0.43	108	.313

* $p < 0.05$, ** $p < 0.01$

Note: ^aMean provided for context. Levels do not reflect continuous variables, e.g., progression from a 2 to a 3 level on Breath Control may not represent an equivalent level of progression as growth from a level 3 to a 4.



Interpreting Results: Research Question 1

- Children in group lessons demonstrated performance of these five behaviors without support.
- Aside from water entry and water exit, the other three behaviors (breath control, back flotation and change in body position) were not demonstrated by a majority of the participants, even at 5 years of age.
- These results suggest several possible explanations:
 - Extended exposure time could have resulted in better skill acquisition.
 - Different developmentally appropriate instructional methods may be needed to achieve competency in these behaviors by a majority of children before 4 to 5 years old.
 - Findings reinforce previous literature that water competence components such as BC, BF and CBO do not emerge prior to 4 to 5 years old in a majority of children participating in group lessons.

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Interpreting Results:

Research Question 1 *(Continued)*

- A strong discrepancy existed between the earliest ages at which children could independently enter the water and the ages at which they could perform unsupported breath control, back flotation and changing body orientation.
 - Not only were the earliest ages older, but the frequency at which the participants achieved unsupported breath control, back flotation and change in body orientation ranged from 11% to 33% (BC), 5% to 23% (BF) and 5% to 38% (CBO).
 - In no case did a majority of the participants achieve unsupported breath control, back flotation or change in body orientation.
- Among children enrolled in PCA, none demonstrated unsupported back flotation between the ages of 1 to 3.9 years.
 - Children enrolled in PSA between ages 2 to 2.9 years (50%) and 3 to 3.9 years (11%) were able to demonstrate this skill unsupported.

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Interpreting Results:

Research Question 1 *(Continued)*

- The higher performance of unsupported water exit requires further explanation.
 - While the achievement of unsupported water exit ranged between 71% to 77%, the assessment did not require that children demonstrate that they could get from deep water to the side in order to exit.
 - If the assessment for unsupported water exit behavior had included prerequisites of supported breath control, back float and change in body orientation, it is likely that unsupported water exit would have had much lower frequencies even at ages 3, 4 and 5.



Interpreting Results: Research Question 2

- As currently taught in the Red Cross group lessons (Parent and Child Aquatics and Preschool Aquatics), performance of all five water competence components did improve significantly—although to differing degrees across components.
- Improvement was greater among the older participants enrolled in the Preschool Aquatics lessons than in the Parent and Child Aquatics lessons.
- The attempt to differentiate between Typical and Modified curricula generally did not produce significant differences except for behaviors within the water entry component.



Study Limitations

- Inconsistent attendance, early withdrawal and ineligibility of some program participants program reduced sample size.
- Duration of the intervention was limited to a maximum of 8 sessions.
- Choice of test sites were limited due to COVID-19 regulations, which impacted ability to target recruitment efforts to some specific racial/ethnic participants (e.g., American Indian or Alaska Native).
- Levels of instructor experience were varied.
- The social-emotional readiness of the children was not assessed.

Note: Possible environmental barriers to participation included:

- A tropical system that was present off the coast of Florida during the second week of lessons, causing weather conditions to be very windy and cold for water activity.
- A major fire that caused significant disruption to the transportation system in Day 8 in Indian River County.



Lessons Learned

- Swim lessons were available at no charge to the participants, which may have been a factor in the lack of commitment to show up to every lesson.
- The difference between the “Typical” and “Modified” program was negligible in relation to study outcomes.
 - We do not know if training to the Modified program influenced delivery of the Typical program.
- The findings raised the need for future research addressing the impact of the following in skill acquisition in developmentally appropriate group lessons:
 - Number of lessons.
 - Length of lessons.
 - Number of participants in each class.
 - Types of teaching techniques.
 - Social-emotional readiness of the children.



Projected Impacts on Future Programming

- Swim lesson curriculum developers can use the resulting information from this study to examine and revise swim lesson programs for young children.
- Earlier attainment of unsupported levels of water competence may have a buffering effect against drowning.
- Consider employing any teaching/learning techniques including progressions and activities which have an evidence-basis that leads to earlier achievement of unsupported swimming behaviors.
- Progressions leading to unsupported skills may be introduced earlier in completion requirements for swim lesson levels for children ages 1 to 4 years.

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Projected Impacts on Future Programming *(Continued)*

- Consider designing assessments that are a composite of multiple components of water competence (i.e., “putting it all together”).
- All swimming skill completion requirements should be designed to conclude with the child reaching a position of safety (e.g., poolside, standing water depth or exiting the water).
- For “adult-assisted” lessons, such as Parent and Child Aquatics, consider establishing completion requirements (e.g., exit skills assessments).



Next Steps: Dissemination of Findings

Articles and abstracts are intended to be submitted to the following:

- Publications
 - *International Journal of Aquatic Research and Education*
 - *American Journal of Public Health*
 - *Pediatrics*
 - *Injury Prevention*
- Presentations
 - *American Public Health Association Conference*
 - *Association of Aquatics Professionals Conference*
 - *Diversity in Aquatics Convention*
 - *World Aquatic Health Conference*
 - *National Recreation and Parks Association Conference*
 - *National Drowning Prevention Alliance Water Safety Conference*



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Appendix A: Teaching Tools

Typical (A) Course Outlines
Modified (B) Course Outline
Component Sequence Charts
Typical (A) Course Skills Charts
Modified (B) Course Skills Charts



Typical (A) Course Outlines



PARENT AND CHILD AQUATICS LEVEL 1 OUTLINE



Instructor's Note: The skills in the outline are not listed in a teaching order. Refer to the sample block plan and lesson plan on Instructor's Corner (instructorscorner.org) for examples of how to organize the skills.

Recommended Equipment		
<ul style="list-style-type: none"> Pool toys, such as floating rubber animals U.S. Coast Guard–approved life jackets in appropriate sizes for parents and children Flotation devices, such as foam noodles, kickboards or swim bar floats 		
Skills	Completion Goals	References
Holding and Support Techniques		
Face-to-face positions		
<ul style="list-style-type: none"> Hug position 	Demonstrate (parent)	WSIM, Ch 3
<ul style="list-style-type: none"> Chin support 	Demonstrate (parent)	WSIM, Ch 3
<ul style="list-style-type: none"> Shoulder support on front 	Demonstrate (parent)	WSIM, Ch 3
Back-to-chest positions		
<ul style="list-style-type: none"> Cuddle position 	Demonstrate (parent)	WSIM, Ch 3
Side-to-side positions		
<ul style="list-style-type: none"> Hip straddle 	Demonstrate (parent)	WSIM, Ch 3
<ul style="list-style-type: none"> Shoulder support on side 	Demonstrate (parent)	WSIM, Ch 3
Working with the Child		
Cueing	Demonstrate (parent)	WSIM, Ch 7, PCA 1
Water Adjustment, Entry and Exit		
Getting wet		
<ul style="list-style-type: none"> Getting wet with toys 	Explore	WSIM, Ch 7, PCA 1
<ul style="list-style-type: none"> Getting wet kicking 	Explore	WSIM, Ch 7, PCA 1
Water entry		
<ul style="list-style-type: none"> Enter water by lifting in 	Demonstrate (parent)	WSIM, Ch 7, PCA 1
<ul style="list-style-type: none"> Enter water by walking in 	Demonstrate (parent)	WSIM, Ch 7, PCA 1
Exploring the pool		
<ul style="list-style-type: none"> Out-of-water exploration 	Explore	WSIM, Ch 7, PCA 1
<ul style="list-style-type: none"> In-water exploration 	Explore, with support	WSIM, Ch 7, PCA 1
Water exit		
<ul style="list-style-type: none"> Exit water by lifting out 	Demonstrate (parent)	WSIM, Ch 7, PCA 1
<ul style="list-style-type: none"> Exit water by walking out 	Demonstrate (parent)	WSIM, Ch 7, PCA 1
<ul style="list-style-type: none"> Exit water using a ladder 	Demonstrate (child)	WSIM, Ch 7, PCA 1

Skills	Completion Goals	References
Breath Control		
Blow bubbles on the surface	Explore, with support	WSIM, Ch 7, PCA 1
Blow bubbles with mouth and nose submerged	Explore, with support	WSIM, Ch 7, PCA 1
Underwater exploration	Explore, with support	WSIM, Ch 7, PCA 1
Submerge mouth, nose and eyes	Explore, with support or independently	WSIM, Ch 7, PCA 1
Buoyancy on Front		
Front glide	Explore, with support	WSIM, Ch 7, PCA 1
Buoyancy on Back		
Back glide	Explore, with support	WSIM, Ch 7, PCA 1
Back float	Explore, with support	WSIM, Ch 7, PCA 1
Changing Direction		
Roll from front to back	Explore, with support	WSIM, Ch 7, PCA 1
Roll from back to front	Explore, with support	WSIM, Ch 7, PCA 1
Swim on Front		
Passing from instructor to parent	Explore, with support	WSIM, Ch 7, PCA 1
Leg action on front	Explore, with support	WSIM, Ch 7, PCA 1
Swim on Back		
Leg action on back	Explore, with support	WSIM, Ch 7, PCA 1
Water Safety		
The importance of wearing a life jacket	Discuss (parent) and Demonstrate (parent and child)	WSIM, Ch 4 SWS, Ch 2
How to call for help and the importance of knowing first aid and CPR	Discuss (parent) and Demonstrate (parent and child)	WSIM, Ch 4 SWS, Ch 2
Basic water safety rules	Discuss (parent)	WSIM, Ch 4 SWS, Ch 2
General water safety around the home	Discuss (parent)	WSIM, Ch 4 SWS, Ch 2
Recreational water illnesses	Discuss (parent)	WSIM, Ch 4 SWS, Ch 2
Sun safety	Discuss (parent)	WSIM, Ch 4 SWS, Ch 2

LWT, Longfellow's WHALE Tales; PCA, Parent and Child Aquatics; SWS, *Swimming and Water Safety*; WSIM, *Water Safety Instructor's Manual*.



PARENT AND CHILD AQUATICS LEVEL 2 OUTLINE

 **Instructor's Note:** The skills in the outline are not listed in a teaching order. Refer to the sample block plan and lesson plan on Instructor's Corner (instructorcorner.org) for examples of how to organize the skills.

Recommended Equipment		
<ul style="list-style-type: none"> Pool toys, such as floating rubber animals and weighted diving objects U.S. Coast Guard–approved life jackets in appropriate sizes for parents and children Flotation devices, such as foam noodles, kickboards or swim bar floats Reaching equipment 		
Skills	Completion Goals	References
Holding and Support Techniques		
Face-to-face positions		
<ul style="list-style-type: none"> Hip support on front 	Demonstrate	WSIM, Ch 3
Back-to-chest positions		
<ul style="list-style-type: none"> Hip support on back Back support Arm stroke position 	Demonstrate	WSIM, Ch 3
Water Adjustment, Entry and Exit		
Water entry		
<ul style="list-style-type: none"> Enter water from a seated position Enter water from a seated position—rolling over and sliding in Enter water by stepping or jumping in Enter water using steps or ramp 	Demonstrate, with assistance	WSIM, Ch 7, PCA 2
Exploring the pool		
<ul style="list-style-type: none"> In-water exploration 	Explore, independently, in shallow water	WSIM, Ch 7, PCA 1
Water exit		
<ul style="list-style-type: none"> Exit water using side of pool Exit water using steps or ramp Exit water using a ladder 	Demonstrate	WSIM, Ch 7, PCA 2
Breath Control		
Underwater exploration		
<ul style="list-style-type: none"> Open eyes and retrieve objects below the surface Open eyes and retrieve submerged objects 	Explore, with support, in shallow water	WSIM, Ch 7, PCA 2
Bobbing	Explore, independently	WSIM, Ch 7, PCA 2

Skills	Completion Goals	References
Buoyancy on Front		
Front glide	Demonstrate, with support or assistance	WSIM, Ch 7, PCA2
Front glide to the wall	Demonstrate, with assistance	WSIM, Ch 7, PCA2
Front float	Demonstrate, with support or assistance	WSIM, Ch 7, PCA2
Buoyancy on Back		
Back glide	Demonstrate, with support or assistance	WSIM, Ch 7, PCA 2
Back float	Demonstrate, with support or assistance	WSIM, Ch 7, PCA 2
Changing Direction		
Roll from front to back	Demonstrate, with assistance	WSIM, Ch 7, PCA 2
Roll from back to front	Demonstrate, with assistance	WSIM, Ch 7, PCA 2
Swim on Front		
Passing from instructor to parent	Demonstrate, with assistance	WSIM, Ch 7, PCA 2
Drafting with breathing	Demonstrate, with assistance	WSIM, Ch 7, PCA 2
Leg action on front—alternating or simultaneous movements	Demonstrate, with assistance	WSIM, Ch 7, PCA 2
Arm action on front—alternating or simultaneous movements	Demonstrate, with support or assistance	WSIM, Ch 7, PCA 2
Combined arm and leg actions on front with breathing	Explore, with assistance	WSIM, Ch 7, PCA 2
Swim on Back		
Leg action on back—alternating or simultaneous movements	Demonstrate, with assistance	WSIM, Ch 7, PCA 2
Arm action on back—alternating or simultaneous movements	Demonstrate, with support or assistance	WSIM, Ch 7, PCA 2
Combined arm and leg actions on back	Explore, with support or assistance	WSIM, Ch 7, PCA 2
Water Safety		
Wearing a life jacket in the water	Discuss (parent) and Demonstrate (child)	WSIM, Ch 4 SWS, Ch 2
Reaching assists	Discuss/demonstrate (parent)	WSIM, Ch 4 SWS, Ch 3
Basic water safety rules review	Discuss (parent)	WSIM, Ch 4 SWS, Ch 2
Safety at the beach and at the waterpark	Discuss (parent)	WSIM, Ch 4 SWS, Ch 2
Water toys and their limitations	Discuss (parent)	WSIM, Ch 4 SWS, Ch 2



PRESCHOOL AQUATICS LEVEL 1 OUTLINE

Instructor's Note: The skills in the outline are not listed in a teaching order. Refer to the sample block plan and lesson plan on Instructor's Corner (instructorscorner.org) for examples of how to organize the skills. All skills should be repeated until the participant is comfortable with the skill. Allow sufficient practice time in each lesson plan. Participants should be able to achieve the completion requirements of each skill at least several times.

Recommended Equipment

- Submersion items, such as diving rings
- U.S. Coast Guard–approved life jackets in appropriate sizes for children
- Flotation devices, such as foam noodles, kickboards or swim bar floats

Skills	Completion Requirements	References
Water Adjustment, Entry and Exit		
Enter water using ramp, steps or side	Demonstrate, independently	WSIM, Ch 8, PSA 1
Exit water using ladder, steps or side	Demonstrate, independently	WSIM, Ch 8, PSA 1
Breath Control and Submerging		
Blow bubbles	Demonstrate, at least 3 seconds	WSIM, Ch 8, PSA 1
Submerge mouth, nose and eyes	Demonstrate in shallow water	WSIM, Ch 8, PSA 1
Open eyes underwater and retrieve submerged objects	Demonstrate in shallow water	WSIM, Ch 8, PSA 1
Buoyancy on Front		
Front glide	Demonstrate, with or without assistance, at least 2 body lengths	WSIM, Ch 8, PSA 1
Recover from a front glide to a vertical position	Demonstrate, with or without assistance	WSIM, Ch 8, PSA 1
Buoyancy on Back		
Back glide	Demonstrate, with assistance, at least 2 body lengths	WSIM, Ch 8, PSA 1
Back float	Demonstrate, with assistance, at least 3 seconds	WSIM, Ch 8, PSA 1
Recover from a back float or glide to a vertical position	Demonstrate, with assistance	WSIM, Ch 8, PSA 1
Changing Direction and Position and Treading		
Roll from front to back	Demonstrate, with support	WSIM, Ch 8, PSA 1
Roll from back to front	Demonstrate, with support	WSIM, Ch 8, PSA 1
Arm and hand treading actions	Explore, in chest-deep water	WSIM, Ch 8, PSA 1 SWS, Ch 5

Skills	Completion Requirements	References
Swim on Front		
Alternating leg action on front	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Simultaneous leg action on front	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Alternating arm action on front	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Simultaneous arm action on front	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Combined arm and leg actions on front	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Swim on Back		
Alternating leg action on back	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Simultaneous leg action on back	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Alternating arm action on back	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Simultaneous arm action on back	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Combined arm and leg actions on back	Demonstrate, with support, at least 2 body lengths	WSIM, Ch 8, PSA 1
Water Safety		
Staying safe around water	Show and tell	WSIM, Ch 4 SWS, Ch 2
Recognizing the lifeguards	Show and tell	WSIM, Ch 4 SWS, Ch 2
Don't Just Pack It, Wear Your Jacket	Demonstrate	WSIM, Ch 4 SWS, Ch 2 LWT
Recognizing an emergency	Show and tell	WSIM, Ch 4 SWS, Ch 3
How to call for help	Demonstrate	WSIM, Ch 4 SWS, Ch 3
Too Much Sun Is No Fun	Show and tell	WSIM, Ch 4 SWS, Ch 2 LWT

Exit Skills Assessment

All Preschool Aquatics Level 1 exit skills can be performed with support.

1. Enter independently, using either the ramp, steps or side, travel at least 5 yards, submerge to mouth and blow bubbles for at least 3 seconds, then safely exit the water. (Children can walk, move along the gutter or "swim.")
2. While in shallow water, glide on front for at least 2 body lengths, then roll to back and float on back for 3 seconds, then recover to a vertical position.

LWT, Longfellow's WHALE Tales; PSA, Preschool Aquatics; SWS, *Swimming and Water Safety*; WSIM, *Water Safety Instructor's Manual*.



PRESCHOOL AQUATICS LEVEL 2 OUTLINE



Instructor's Note: The skills in the outline are not listed in a teaching order. Refer to the sample block plan and lesson plan on Instructor's Corner (instructorscorner.org) for examples of how to organize the skills. All skills should be repeated until the participant is comfortable with the skill. Allow sufficient practice time in each lesson plan. Participants should be able to achieve the completion requirements of each skill at least several times.

Recommended Equipment		
<ul style="list-style-type: none"> Submersion items, such as diving rings U.S. Coast Guard–approved life jackets in appropriate sizes for children Flotation devices, such as foam noodles, kickboards or swim bar floats 		
Skills	Completion Requirements	References
Water Adjustment, Entry and Exit		
Enter water by stepping in from the deck or low height	Demonstrate, independently, into shoulder-deep water	WSIM, Ch 8, PSA 2
Exit water using ladder, steps or side	Demonstrate, independently, in chest-deep water	WSIM, Ch 8, PSA 1
Breath Control and Submerging		
Bobbing	Demonstrate, independently, at least 5 times	WSIM, Ch 8, PSA 2 SWS, Ch 5
Open eyes underwater and retrieve submerged objects	Demonstrate, independently, in chest-deep water	WSIM, Ch 8, PSA 2
Buoyancy on Front		
Front glide	Demonstrate, with assistance, at least 2 body lengths	WSIM, Ch 8, PSA 2
Front float	Demonstrate, with assistance, for at least 3 seconds	WSIM, Ch 8, PSA 2
Recover from a front float or glide to a vertical position	Demonstrate, with assistance, in chest-deep water	WSIM, Ch 8, PSA 1
Buoyancy on Back		
Back glide	Demonstrate, with assistance, at least 2 body lengths	WSIM, Ch 8, PSA 1
Back float	Demonstrate, with assistance, at least 5 seconds	WSIM, Ch 8, PSA 1
Recover from a back float or glide to a vertical position	Demonstrate, with assistance, in chest-deep water	WSIM, Ch 8, PSA 1
Changing Direction and Position and Treading		
Roll from front to back	Demonstrate, with assistance	WSIM, Ch 8, PSA 2
Roll from back to front	Demonstrate, with assistance	WSIM, Ch 8, PSA 2
Tread water using arm and leg actions	Demonstrate, with assistance, at least 15 seconds, in shoulder-deep water	WSIM, Ch 8, PSA 2

Skills	Completion Requirements	References
Swim on Front		
Combined arm and leg actions on front	Demonstrate, with assistance, at least 3 body lengths	WSIM, Ch 8, PSA 1
Swim on Back		
Finning arm action on back	Demonstrate, with assistance, at least 3 body lengths	WSIM, Ch 8, PSA 2
Combined arm and leg actions on back	Demonstrate, with assistance, at least 3 body lengths	WSIM, Ch 8, PSA 1
Water Safety		
Staying safe around water	Discuss	WSIM, Ch 4 SWS, Ch 2
Recognizing the lifeguards	Discuss	WSIM, Ch 4 SWS, Ch 2
Don't Just Pack It, Wear Your Jacket	Discuss/demonstrate	WSIM, Ch 4 SWS, Ch 2 LWT
Recognizing an emergency	Discuss	WSIM, Ch 4 SWS, Ch 3
How to call for help	Discuss/demonstrate	WSIM, Ch 4 SWS, Ch 3
Too Much Sun Is No Fun	Discuss	WSIM, Ch 4 SWS, Ch 2 LWT
Exit Skills Assessment		
All Preschool Aquatics Level 2 exit skills can be performed with assistance.		
<ol style="list-style-type: none"> Glide on front for at least 2 body lengths, roll to back, float on back for 15 seconds, then recover to a vertical position. Glide on back for at least 2 body lengths, roll to front, then recover to a vertical position. Swim using combined arm and leg actions on front for 3 body lengths, roll to back, float for 15 seconds, roll to front, then continue swimming on front for at least 3 body lengths. 		



Modified (B) Course Outlines



PARENT AND CHILD AQUATICS LEVEL 1B OUTLINE

Recommended Equipment			
<ul style="list-style-type: none"> Pool toys, such as floating rubber animals, rings and sinking objects U.S. Coast Guard-approved life jackets of appropriate sizes for parents and children Flotation devices, such as foam noodles, kickboards or swim bars 			
Skills	Completion Goals	ARWCAG	References
Holding and Support Techniques			
Face-to-face positions <ul style="list-style-type: none"> Hug position Chin support Shoulder support on front 	Demonstrate (parent) Demonstrate (parent) Demonstrate (parent)		WSIM, Ch 3
Back-to-chest position <ul style="list-style-type: none"> Cuddle 	Demonstrate (parent)		
Side-to-side position <ul style="list-style-type: none"> Hip straddle Shoulder support on side 	Demonstrate (parent) Demonstrate (parent)		
Working with the Child			
Cueing	Demonstrate (parent)		WSIM, Ch 7
Water Adjustment, Entry and Exit			
Getting Wet <ul style="list-style-type: none"> Getting wet with toys Getting wet kicking 	Explore Explore	WO1+2 WO1+2	WSIM, Ch 7
Water Entry <ul style="list-style-type: none"> Lifting in From a seated position—rolling over and sliding in Walking in 	Demonstrate (parent) Explore, with support or assistance Explore, with support or assistance	WO2, WE1 WE2 WO2/WE1	
Exploring the Pool <ul style="list-style-type: none"> Out-of-water exploration In-water exploration 	Explore Explore, with support or assistance	WO1 WO2/3	
Water Exit			
<ul style="list-style-type: none"> Hanging on to side of pool Lifting out Walking out 	Explore, with support or assistance Demonstrate (parent) Explore, with support or assistance	WO3, WX2 WX1 WX1/2	WSIM, Ch 7
Breath Control			
Blowing bubbles on the surface	Explore, with or without support, at least 3 seconds	BC2	WSIM, Ch 7
Blowing bubbles with mouth and nose submerged	Explore, with or without support, at least 3 seconds	BC3	
Underwater exploration	Explore, with or without support, at least 3 seconds	BC3	
Submerging mouth, nose and eyes	Explore, with or without support, at least 3 seconds	BC3	
Buoyancy on Front			
Front float	Explore, with support or assistance	FF2/3	WSIM, Ch 7

Front glide	Explore, with support or assistance, at least 2 body lengths		WSIM, Ch 7
Recover from a front float or glide to a vertical position	Explore, with support or assistance	CBP2	
Buoyancy on Back			
Back float	Explore, with support or assistance, at least 3 seconds	CMB1, BF1	WSIM, Ch 7
Back glide	Explore, with support or assistance, at least 2 body lengths	CMB2	
Recover from a back float or glide to a vertical position	Demonstrate, with assistance	CBP2	
Changing Body Position and Direction			
Roll from front to back	Explore, with support or assistance	CBP2	WSIM, Ch 7
Roll from back to front	Explore, with support or assistance	CBP2	
Turn toward pool side	Explore, with support or assistance	CBO2	
Swim on Front			
Passing from instructor to parent	Explore, with support or assistance	CMF2	WSIM, Ch 7
Leg action	Explore, with support or assistance, at least 2 body lengths	CMF2	
Arm action	Explore, with support or assistance, at least 2 body lengths	CMF2	
Combined movement on front	Explore, with support or assistance, at least 2 body lengths	CMF2	
Swim on Back			
Leg action	Explore, with support or assistance, at least 2 body lengths	CMB2	WSIM, Ch 7
Arm action	Explore, with support or assistance, at least 2 body lengths	CMB2	
Combined movement on back	Explore, with support or assistance, at least 2 body lengths	CMB2	
Water Safety			
The importance of wearing a life jacket	Discuss (parent) and Demonstrate (parent and child)		SWS, Ch 2 WSIM, Ch 4
How to call for help and the importance of knowing first aid and CPR	Discuss (parent) and Demonstrate (parent and child)		
Basic water safety rules	Discuss (parent)		
General water safety around the home	Discuss (parent)		
Recreational water illnesses	Discuss (parent)		
Sun safety	Discuss (parent)		
Exit Skills Assessment			
All Parent and Child Aquatics Level 1 exit skills can be performed with support or assistance.			
1. Enter water using either the ramp, steps or side [WO3, WE2], travel at least 2 body lengths [CMF2], submerge to mouth and blow bubbles for at least 3 seconds [BC3] then safely exit the water. (Children can walk, move along the gutter or "swim.")			
2. Start in the water with support from the adult [FF2], travel at least 2 body lengths using the combined movement on front [CMF2] to get to the side then safely exit the water.			



Parent and Child Aquatics Level 2B Outline

Recommended Equipment			
<ul style="list-style-type: none"> Pool toys, such as floating rubber animals and weighted diving objects U.S. Coast Guard-approved life jackets of appropriate sizes for parents and children Flotation devices, such as foam noodles, kickboards or barbells Reaching equipment 			
Skills	Completion Goals	ARWCAG	References
Holding and Support Techniques			
Face-to-face position			
• Hip support on front	Demonstrate	WO2	WSIM, Ch3
Back-to-chest positions			
• Hip support on back	Demonstrate	WO2	
• Back support	Demonstrate	WO2	
• Arm stroke	Demonstrate	WO2	
Water Adjustment, Entry and Exit			
Water Entry			
• Seated position	Demonstrate, with assistance	WO2	WSIM, Ch7
• Seated position—rolling over and sliding in	Demonstrate, with or without assistance	WO2, WE2	
• Stepping or jumping in	Demonstrate, with or without assistance	WO2, WE2	
• Using a ladder	Demonstrate, with or without assistance	WO2, WE2	
• Using stairs	Demonstrate, with or without assistance	WO2, WE2	
In-water exploration	Explore, independently, in shallow water	WO3, CMF2	
Water Exit			
• Using side of pool	Demonstrate, with or without assistance	WX3	
• Using steps or ramp	Demonstrate, with or without assistance	WX3	
• Using a ladder	Demonstrate, with or without assistance	WX3	
Breath Control			
Underwater exploration			
• Open eyes and retrieve objects below the surface	Explore, with support or assistance, in shallow water	BC3/4	WSIM, Ch 7
• Open eyes and retrieve submerged objects	Explore, with or without assistance, in shallow water	BC4	
Bobbing	Explore, independently, at least 10 times	BC4	
Buoyancy on Front			
Front glide	Demonstrate, with or without assistance, at least 2 body lengths	BC4, FF2/3	WSIM, Ch 7
Front glide to the wall	Demonstrate, with or without assistance, at least 2 body lengths	BC4, FF2/3	
Front float	Demonstrate, with or without assistance, at least 3 seconds	FF2/3	
Recover from a front float or glide to a vertical position	Demonstrate, with or without assistance	CBP2/3	



Buoyancy on Back			
Back glide	Demonstrate, with support, assistance or independently, at least 2 body lengths	BF2/3 CMB2/3	WSIM, Ch7
Back float	Demonstrate, with support, assistance or independently, at least 10 seconds	BF2/3	
Recover from a back float or glide to a vertical position	Demonstrate, with or without assistance	CBP2/3	
Changing Body Position and Direction			
Roll from front to back	Demonstrate, with or without assistance	CBF2/3	WSIM, Ch7
Roll from back to front	Demonstrate, with or without assistance	CBF2/3	
Turn toward side of pool	Demonstrate, with or without assistance	CBO3/4	
Swim on Front			
Passing between adults	Demonstrate, with assistance	CMF2	WSIM, Ch7
Drafting with breathing	Demonstrate, with assistance	CMF2/3 BC4/5	
Leg action—alternating or simultaneous movements	Demonstrate, with or without assistance, at least 3 body lengths	CMF2	
Arm action—alternating or simultaneous movements	Demonstrate, with support, assistance or independently, at least 3 body lengths	CMF2	
Combined arm and leg actions on front with breathing	Explore, with or without assistance, at least 3 body lengths	CMF2/3	
Swim on Back			
Leg action—alternating or simultaneous movements	Demonstrate, with or without assistance, at least 3 body lengths	CMB2/3	WSIM, Ch 7
Arm action—alternating or simultaneous movements	Demonstrate, with support, assistance or independently, at least 3 body lengths	CMB2/3	
Combined arm and leg actions on back	Explore, with or without assistance, at least 3 body lengths	CMB2/3	
Water Safety			
Wearing a life jacket in the water	Discuss (parent) and Demonstrate (child)		SWS, Ch 2 WSIM Ch 4
Reaching assists	Discuss/demonstrate (parent)		
Basic water safety rules review	Discuss (parent)		
Safety at the beach and at the waterpark	Discuss (parent)		
Water toys and their limitations	Discuss (parent)		
Exit Skills Assessment	<p>All Parent-Child Aquatics Level 2 exit skills may be performed with assistance or independently. A position of safety could be hanging on the wall or exiting the water.</p> <ol style="list-style-type: none"> Enter water [WE2 or 3], glide on front at least 2 body lengths [FF2 or 3], roll to back [CBP2 or 3], float on back for 10 seconds [BF5], recover to a vertical position, [CBP2 or 3] then travel to a position of safety. Glide on back for at least 2 body lengths [BF2 or 3], roll to front [CBP2 or 3], recover to a vertical position, [CBO2 or 3] then travel to a position of safety. Swim using combined arm and leg actions on front for at least 3 body lengths [CMF2 or 3], roll to back [CBP2 or 3], float for 5 seconds [BF2, 3, or 4], roll to front [CBP2 or 3], continue swimming on front for at least 3 body lengths [CMF2 or 3] to a position of safety. 		

Preschool Aquatics Level 1B Outline

Equipment			
<ul style="list-style-type: none"> Submersion items (such as diving rings) U.S. Coast Guard-approved life jackets (appropriate sizes for children) Unattached flotation support devices, such as foam noodles, swim bar floats and kickboards 			
Skills	Completion Requirements	ARWCG	References
Water Entry and Exit			
Enter water using ramps, steps or side	Demonstrate, independently	WO3, WE3	WSIM, Ch8, PSA1
Exit water using ladder, steps, or side	Demonstrate, independently	WX4/5, WO3	
Breath Control and Submerging			
Blowing bubbles	Demonstrate, at least 3 seconds	BC3	WSIM, Ch8, PSA1
Submerging mouth, nose and eyes	Demonstrate in shallow water	BC3/4	
Opening eyes under water and retrieving submerged objects	Demonstrate in shallow water	BC3 or BC4	
Buoyancy on Front			
Front glide	Demonstrate, with or without assistance, at least 2 body lengths	BC5, FF3/4	WSIM, C8, PSA1
Recover from a front glide to a vertical position	Demonstrate, with or without assistance	CBP2/3/4	
Buoyancy on Back			
Back glide	Demonstrate, with or without assistance, at least 2 body lengths	BF2/3, CMB2/3	WSIM, Ch8, PSA1
Back float	Demonstrate, with or without assistance, at least 3 seconds	BF3/4	
Recover from a back float to a vertical position	Demonstrate, with or without assistance	BF2, CBP2/3	
Changing Direction and Position and Treading			
Roll from front to back	Demonstrate, with support or assistance	CBP2	WSIM, Ch8, PSA1; SWS, Ch5
Roll from back to front	Demonstrate, with support or assistance	CBP2	
Arm and hand treading actions	Explore, in chest-deep water	CBO2	
Turn toward pool side	Explore, with support or assistance	CBO2 or 3	
Swim on Front			
Alternating leg action	Demonstrate, with support or assistance, at least 2 body lengths	CMF2 or 3	WSIM, Ch8, PSA1
Simultaneous leg action	Demonstrate, with support or assistance, at least 2 body lengths	CMF2 or 3	
Alternating arm action	Demonstrate, with support or assistance, at least 2 body lengths	CMF2 or 3	WSIM, Ch8, PSA1
Simultaneous arm action	Demonstrate, with support or assistance, at least 2 body lengths	CMF2 or 3	
Combined arm and leg actions on front	Demonstrate, with support or	CMF2 or 3	

	assistance, at least 2 body lengths		
Swim on Back			
Alternating leg action	Demonstrate, with support or assistance, at least 2 body lengths	CMB2 or 3	WSIM, Ch8, PSA1
Simultaneous leg action	Demonstrate, with support or assistance, at least 2 body lengths	CMB2 or 3	
Alternating arm action	Demonstrate, with support or assistance, at least 2 body lengths	CMB2 or 3	
Simultaneous arm action	Demonstrate, with support or assistance, at least 2 body lengths	CMB2 or 3	
Combined arm and leg actions on back	Demonstrate, with support or assistance, at least 2 body lengths	CMB2 or 3	
Water Safety			
Staying safe around aquatic environments	Show and tell		SWS, Ch2 WSIM, Ch4, LWT
Recognizing the lifeguards	Show and tell		
Don't Just Pack It, Wear Your Jacket	Demonstrate		
Recognizing an emergency	Show and tell		
How to call for help	Demonstrate		
Too Much Sun Is No Fun	Show and tell		
Exit Skills Assessment			
<p>All Preschool Aquatics Level 1 exit skills can be performed with support, assistance or independently. A position of safety could be hanging on the wall or exiting the water.</p> <ol style="list-style-type: none"> Enter independently [WE2 or 3], using either the ramp, steps or side [WE3], travel at least 5 yards [CMF3], submerge to mouth [BC3] and blow bubbles for at least 3 seconds [BC3] then safely exit the water [WE3]. (Children can walk, move along the gutter or "swim.") While in shallow water, glide on front at least 2 body lengths [CMF3], then roll to back [CBP3] and float on back for 3 seconds [BF3 or 4] recover to a vertical position, [CBP3] then travel to a position of safety. 			



Preschool Aquatics Level 2B Outline

Equipment			
<ul style="list-style-type: none"> Submersion items, such as diving rings U.S. Coast Guard-approved life jackets in appropriate sizes for children Flotation devices, such as foam noodles, kickboards or swim bar floats 			
Skills	Completion Requirements		References
Water Entry and Exit			
Enter water by stepping in from deck or low height	Demonstrate, independently into shoulder-deep water	WE3	WSIM, Ch8, PSA2
After entering, turn around and face the wall (entry pt)	<i>Demonstrate independently in shoulder-deep water</i>	<i>CBO3 or 4</i>	
Exit water using ladder, steps or side	Demonstrate, independently, in chest-deep water	WE3	WSIM, Ch8, PSA1
Breath Control and Submerging			
Bobbing	Demonstrate, independently, at least 5 times	BC5	WSIM, Ch8, PSA2 SWS, Ch5
Opening eyes under water and retrieving submerged objects	Demonstrate, independently, in chest-deep water	BC5	WSIM, Ch8, PSA2
Buoyancy on Front			
Front glide	Demonstrate, with <i>or without</i> assistance, at least 2 body lengths	FF4; BC5	WSIM, Ch8, PSA2
Front float	Demonstrate, with <i>or without</i> assistance, for at least 3 seconds	FF4	
Recover from a front float or glide to a vertical position	Demonstrate, with <i>or without</i> assistance, in chest-deep water	CBP4	WSIM, Ch8, PSA1
Buoyancy on Back			
Back glide	Demonstrate, with <i>or without</i> assistance, at least 2 body lengths	BF4	WSIM, Ch8, PSA1
Back float	Demonstrate, with <i>or without</i> assistance, at least 15 seconds	BF4	
Recover from a back float or glide to a vertical position	Demonstrate, with <i>or without</i> assistance, in chest-deep water	CBP4	WSIM, Ch8, PSA2
Changing Direction and Position and Treading			
Roll from front to back	Demonstrate, with <i>or without</i> assistance	CBP3	WSIM, Ch8, PSA2
Roll from back to front	Demonstrate, with <i>or without</i> assistance	CBP3	
Using arm and leg actions	Demonstrate, with <i>or without</i> assistance, at least 15 seconds, in shoulder-deep water	CBO4	
Turn around	<i>Demonstrate, with or without assistance</i>	<i>CBO3 or 4</i>	

Swim on Front			
Combined arm and leg actions on front	Demonstrate, with <i>or without</i> assistance, at least 3 body lengths	CMF4 or 5	WSIM, Ch8, PSA1
Swim on Back			
Finning arm action	Demonstrate, with <i>or without</i> assistance, at least 3 body lengths	CMB3 or 4	WSIM, Ch8, PSA2
Combined arm and leg actions on back	Demonstrate, with <i>or without</i> assistance, at least 3 body lengths	CMB2 or 3	WSIM, Ch8, PSA1
Water Safety			
Staying safe around aquatic environments	Discuss		SWS, Ch2; WSIM, Ch4; LWT
Recognizing the lifeguards	Discuss		
Don't just pack it, wear your jacket	Discuss/demonstrate		
Recognizing an emergency	Discuss		
How to call for help	Discuss/demonstrate		
Too much sun is no fun	Discuss		
Exit Skills Assessment			
All Preschool Aquatics Level 2 exit skills may be performed with <i>or without</i> assistance. A position of safety could be hanging on the wall or exiting the water.			
<ol style="list-style-type: none"> Glide on front at least 2 body lengths (BC5; FF4), roll to back (CBP3), float on back for 15 seconds (BG4/5), recover to a vertical position, (CBP3) then travel to a position of safety. Glide on back for at least 2 body lengths (BF4), roll to front (CBP3), then recover to a vertical position (CBP3) then travel to a position of safety Swim using combined arm and leg actions on front for at least 3 body lengths (CMF3), roll to back (CBP3), float on back for 15 seconds (BF5), roll to front (CBP3), continue swimming on front for at least 3 body lengths, (CMF3) then travel to a position of safety 			



Component Sequence Charts



Water Entry

Water Entry Component Sequence (WE)

<i>If a swimmer demonstrates</i>	<i>Then that swimmer may be ready to</i>
1. No voluntary entry	<ul style="list-style-type: none"> • Sit on deck, dangle feet in water, gently splash • Be lifted in by instructor/ caregiver • Climb in over side or walk down steps while holding caregiver or instructor hand
2. Caregiver- or flotation-supported feet-first entry	<ul style="list-style-type: none"> • Practice getting in and out of pool over the side • Step in while holding caregiver or instructor hand
3. Unassisted voluntary feet-first entry	<ul style="list-style-type: none"> • Practice different ways to jump in with minimal assistance in both shallow and deeper water • Slide in on stomach with support or assistance

Water Entry (WE) Levels Possible Games, Songs, Rhymes to Promote WE

No voluntary entry	<ul style="list-style-type: none"> • Caregiver/Instructor lift into pool or walk in together • Caregiver/child partner sit and slide in
Caregiver- <u>or</u> flotation-supported feet-first entry	<ul style="list-style-type: none"> • Caregiver/child partner step in holding hands* • “Humpty Dumpty” • “Jack Be Nimble” • Children in the Pool (Tune of “Farmer in the Dell”) • Imagination • Caregiver/child partner jump
Unassisted voluntary feet-first entry	<ul style="list-style-type: none"> • Chop Chop Timber! • Hoop Jumping • Jump and Turn • Jump plus Rocket Ship Launch (push off bottom)

* See *Aquatic Readiness* games



Water Exit

Water Exit Component Sequence (WX)

<i>If a swimmer demonstrates.....</i>	<i>Then that swimmer may be ready to.....</i>
1. No voluntary exit demonstrated	<ul style="list-style-type: none"> • Be lifted out by instructor/caregiver • Walk up down steps or ramp while holding caregiver's hand • Crawl out in zero depth water
2. Caregiver-supported exit to pool side	<ul style="list-style-type: none"> • Practice getting out of pool over the side or up stairs or ramp holding on to railing with assistance by caregiver or instructor
3. Flotation-supported or caregiver-assisted exit to pool side	<ul style="list-style-type: none"> • Climb out of pool over the side with minimal caregiver support • Walk up stairs or ramp independently
4. Independent exit to pool side	<ul style="list-style-type: none"> • Explore different ways to climb out of pool at different places in the pool (shallow, deep water, ladders)
5. Independent exit to pool side <u>and</u> exit from pool (over side, up stairs/ladder or ramp or ladder)	<ul style="list-style-type: none"> • Practice feet-first entry into pool, return to side, and exit the water at different parts of the pool

Water Exit (WX) Levels

Possible Games, Songs, Rhymes to Promote WX

No voluntary exit demonstrated	<ul style="list-style-type: none"> • Lift out/walk out together • “Up, up, and away” game with caregiver assist
Caregiver-supported exit to pool side	<ul style="list-style-type: none"> • “Turn Around Game” (on deck) • “Up, up, and away” game using noodle or flotation
Flotation-supported or caregiver-assisted exit to pool side	<ul style="list-style-type: none"> • “Turn Around Game” (in water) • “Up, Up, and Away” game without flotation
Independent exit to pool side	<ul style="list-style-type: none"> • “Rocket ship blast off” in water from side, turn, and back to wall followed by “Up, up, and away game”
Independent exit to pool side and exit from pool	<ul style="list-style-type: none"> • “Jump into my circle” followed by turning around, coming back to side and playing “Up, up, and away game”



Breath Control

Breath Control Component Sequence (BC)

<i>If a swimmer demonstrates.....</i>	<i>Then that swimmer may be ready to.....</i>
1. Reflexive breath holding when face is voluntarily submerged	<ul style="list-style-type: none"> Mimic face submersion by caregiver; put chin and mouth in water Play <i>Magic Candle</i> w/ finger Wash face with wet cloth
2. Allowing water voluntarily in and/or around mouth resulting in shipping or spouting	<ul style="list-style-type: none"> Practice “<i>whale spouting</i>” or blowing bubbles Wash face Sprinkle water over the head to acclimate to water
3. Voluntary partial facial submersion (mouth or nose)	<ul style="list-style-type: none"> Practice submerging different parts of head
4. Voluntary full head submersion	<ul style="list-style-type: none"> Prolong submersion to several seconds; do repeated brief submersions
5. Repeated voluntary submersion/ short periods of breath-holding	<ul style="list-style-type: none"> Combine repeated submersions with activities (e.g., walking, bouncing, floating, gliding)
6. Extended voluntary breath-holding and/or repeated rhythmic breathing with skill	<ul style="list-style-type: none"> Practice rhythmic and rotary breathing with various strokes starting w/ 1 cycle and then add more cycles of stroke

Breath Control (BC) Levels

Breath Control (BC) Levels	Possible Games, Songs, Rhymes to Promote BC
1. Reflexive breath holding when face is voluntarily submerged	<ul style="list-style-type: none"> Washcloth Play* It’s Raining, It’s Pouring*
2. Allowing water voluntarily in and/or around mouth resulting in shipping or spouting	<ul style="list-style-type: none"> Look and Listen (Fish Talk)* Whale spouting* Bobbing*
3. Voluntary partial facial submersion (mouth or nose)	<ul style="list-style-type: none"> Magic Candle* “London Bridge” Baby Dolphin
4. Voluntary full head submersion	<ul style="list-style-type: none"> Pop Goes the Weasel/ Jack in the Box Treasure Hunt Flower Garden* Buddy Bobbing
5. Repeated voluntary submersion/ short periods of breath-holding	<ul style="list-style-type: none"> Treasure Hunt Water Push Ball Tea Party Disappearing Fish Game
6. Extended voluntary breath-holding and/or repeated rhythmic breathing	<ul style="list-style-type: none"> Submarine Drop the Puck (Water Duck, Duck, Goose) Charlie Over the Water

* See *Aquatic Readiness* games



Back Buoyancy/Flotation

Back (Supine) Buoyancy/Flotation Component Sequence (BF)

<i>If a swimmer demonstrates.....</i>	<i>Then that swimmer may be ready to.....</i>
1. No back flotation demonstrated	<ul style="list-style-type: none"> Practice assisted back float w/caregiver or using side
2. Back flotation with caregiver/instructor support	<ul style="list-style-type: none"> Practice assisted back float with different flotation devices Practice recovery to vertical to stand up from back float with assist
3. Back flotation with instructional flotation device support	<ul style="list-style-type: none"> Brief unsupported back floats (use wall) and recover to vertical (with assist if needed)
4. Momentary (1-3 seconds) voluntary back flotation	<ul style="list-style-type: none"> Extend back float to 5+ seconds in various depths of water, w/ & without assist or support
5. Independent (>3 seconds) voluntary back flotation	<ul style="list-style-type: none"> Extend back float with different body inclinations and recover to vertical + roll over without assist

Back Float (BF) Levels

Back Float (BF) Levels	Possible Games, Songs, Rhymes to Promote BF
No back flotation demonstrated	<ul style="list-style-type: none"> Limbo* – on deck and in water with adult support Twinkle Twinkle Little Star The Best Log
Back flotation with caregiver/instructor support	<ul style="list-style-type: none"> In-Water Limbo* (in shallow water or at pool side) Float like a Boat Be an airplane or a butterfly and stretch out wings (arms) Gingerbread Cookie Float
Back flotation with instructional flotation device support	<ul style="list-style-type: none"> Airplane Water Limbo* “Twinkle, Twinkle Little Star” Imagination Merry-Go-Round Be a leaf floating on a pond Pretend it is nighttime and quietly count the stars (lights)
Momentary (1-3 seconds) voluntary back flotation	<ul style="list-style-type: none"> Musical Kickboards Rocket Ship
Independent (>3 seconds) voluntary back flotation	<ul style="list-style-type: none"> Rocket Ship Log Tag

* See *Aquatic Readiness* games



Change in Body Orientation

Change in Body Orientation (turning around) Component Sequence (CBO)

<i>If a swimmer demonstrates.....</i>	<i>Then that swimmer may be ready to.....</i>
1. No change in body orientation demonstrated	<ul style="list-style-type: none"> Practice turning around with caregiver/instructor support and assist
2. Caregiver/instructor-supported body orientation (turning around) change	<ul style="list-style-type: none"> Turn around toward pool side while using different flotation devices
3. Body orientation (turning around) change while supported by instructional flotation device	<ul style="list-style-type: none"> Turn toward and away from side with minimum assist—may use bottom or side of pool to independently turn around
4. Independent voluntary body orientation (turning around) change	<ul style="list-style-type: none"> Practice turning toward and away from side in different directions with no assist for >5-10 sec

Change in Body Orientation (CBO) Levels

Possible Games, Songs, Rhymes to Promote CBO

No change in body orientation demonstrated	<ul style="list-style-type: none"> Turn Around game (on deck and at side with adult)*
Caregiver/instructor-supported body orientation (turning around) change	<ul style="list-style-type: none"> Turn Around game (with adult support)* Do Si Do – Turn Your Partner*
Body orientation (turning around) change while supported by instructional flotation device	<ul style="list-style-type: none"> Turn Around game* Ride 'em Cowboy(girl) – using noodle*
Independent voluntary body orientation (turning around) change	<ul style="list-style-type: none"> Hoop Jumping Jump and Turn

* See *Aquatic Readiness* or other games



Typical (A) Course Skills Checklists





SKILLS CHECKLIST

Parent and Child Aquatics Level 1

Clear Form

Instructor's Name: Date:	Participant's Name									
	1. PARENT CHILD	2. PARENT CHILD	3. PARENT CHILD	4. PARENT CHILD	5. PARENT CHILD	6. PARENT CHILD	7. PARENT CHILD	8. PARENT CHILD	9. PARENT CHILD	10. PARENT CHILD
Hug position	<input type="checkbox"/>									
Chin support	<input type="checkbox"/>									
Shoulder support on front	<input type="checkbox"/>									
Cuddle position	<input type="checkbox"/>									
Hip straddle	<input type="checkbox"/>									
Shoulder support on side	<input type="checkbox"/>									
Cueing	<input type="checkbox"/>									
Getting wet with toys	<input type="checkbox"/>									
Getting wet kicking	<input type="checkbox"/>									
Enter water by lifting in	<input type="checkbox"/>									
Enter water by walking in	<input type="checkbox"/>									
Out-of-water exploration	<input type="checkbox"/>									
In-water exploration	<input type="checkbox"/>									
Exit water by lifting out	<input type="checkbox"/>									

Instructor's Name: Date:	Participant's Name									
	1. PARENT CHILD	2. PARENT CHILD	3. PARENT CHILD	4. PARENT CHILD	5. PARENT CHILD	6. PARENT CHILD	7. PARENT CHILD	8. PARENT CHILD	9. PARENT CHILD	10. PARENT CHILD
Exit water by walking out	<input type="checkbox"/>									
Exit water using a ladder	<input type="checkbox"/>									
Blow bubbles on the surface	<input type="checkbox"/>									
Blow bubbles with mouth and nose submerged	<input type="checkbox"/>									
Underwater exploration	<input type="checkbox"/>									
Submerge mouth, nose and eyes	<input type="checkbox"/>									
Front glide	<input type="checkbox"/>									
Back glide	<input type="checkbox"/>									
Back float	<input type="checkbox"/>									
Roll from front to back	<input type="checkbox"/>									
Roll from back to front	<input type="checkbox"/>									
Passing from instructor to parent	<input type="checkbox"/>									
Leg action on front	<input type="checkbox"/>									
Leg action on back	<input type="checkbox"/>									
Safety Topics	<input type="checkbox"/>									
The importance of wearing a life jacket	<input type="checkbox"/>									
How to call for help and the importance of knowing first aid and CPR	<input type="checkbox"/>									
Basic water safety rules	<input type="checkbox"/>									
General water safety around the home	<input type="checkbox"/>									
Recreational water illnesses	<input type="checkbox"/>									
Sun safety	<input type="checkbox"/>									



SKILLS CHECKLIST

Parent and Child Aquatics Level 2

Clear Form

Instructor's Name: Date:	Participant's Name									
	1. PARENT CHILD	2. PARENT CHILD	3. PARENT CHILD	4. PARENT CHILD	5. PARENT CHILD	6. PARENT CHILD	7. PARENT CHILD	8. PARENT CHILD	9. PARENT CHILD	10. PARENT CHILD
Hip support on front	<input type="checkbox"/>									
Hip support on back	<input type="checkbox"/>									
Back support	<input type="checkbox"/>									
Arm stroke position	<input type="checkbox"/>									
Enter water from a seated position	<input type="checkbox"/>									
Enter water from a seated position—rolling over and sliding in	<input type="checkbox"/>									
Enter water by stepping or jumping in	<input type="checkbox"/>									
Enter water using a ladder	<input type="checkbox"/>									
Enter water using steps or ramp	<input type="checkbox"/>									
In-water exploration (in shallow water)	<input type="checkbox"/>									
Exit water using side of pool	<input type="checkbox"/>									
Exit water using steps or ramp	<input type="checkbox"/>									
Exit water using a ladder	<input type="checkbox"/>									
Open eyes and retrieve objects below the surface	<input type="checkbox"/>									
Open eyes and retrieve submerged objects	<input type="checkbox"/>									

Instructor's Name: Date:	Participant's Name									
	1. PARENT CHILD	2. PARENT CHILD	3. PARENT CHILD	4. PARENT CHILD	5. PARENT CHILD	6. PARENT CHILD	7. PARENT CHILD	8. PARENT CHILD	9. PARENT CHILD	10. PARENT CHILD
Bobbing	<input type="checkbox"/>									
Front glide	<input type="checkbox"/>									
Front glide to the wall	<input type="checkbox"/>									
Front float	<input type="checkbox"/>									
Back glide	<input type="checkbox"/>									
Back float	<input type="checkbox"/>									
Roll from front to back	<input type="checkbox"/>									
Roll from back to front	<input type="checkbox"/>									
Passing from instructor to parent	<input type="checkbox"/>									
Drafting with breathing	<input type="checkbox"/>									
Leg action on front—alternating or simultaneous movements	<input type="checkbox"/>									
Arm action on front—alternating or simultaneous movements	<input type="checkbox"/>									
Combined arm and leg actions on front with breathing	<input type="checkbox"/>									
Leg action on back—alternating or simultaneous movements	<input type="checkbox"/>									
Arm action on back—alternating or simultaneous movements	<input type="checkbox"/>									
Combined arm and leg actions on back	<input type="checkbox"/>									
Safety Topics	<input type="checkbox"/>									
Wearing a life jacket in the water	<input type="checkbox"/>									
Reaching assists	<input type="checkbox"/>									
Basic water safety rules review	<input type="checkbox"/>									
Safety at the beach and at the waterpark	<input type="checkbox"/>									
Water toys and their limitations	<input type="checkbox"/>									



SKILLS CHECKLIST

Preschool Aquatics Level 1

Clear Form

Instructor's Name:	Participant's Name										
Date:		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Enter water using ramp, steps or side		<input type="checkbox"/>									
Exit water using ladder, steps or side		<input type="checkbox"/>									
Blow bubbles, 3 seconds		<input type="checkbox"/>									
Submerge mouth, nose and eyes		<input type="checkbox"/>									
Open eyes underwater and retrieve submerged objects (in shallow water)		<input type="checkbox"/>									
Front glide, 2 body lengths		<input type="checkbox"/>									
Recover from a front glide to a vertical position		<input type="checkbox"/>									
Back glide, 2 body lengths		<input type="checkbox"/>									
Back float, 3 seconds		<input type="checkbox"/>									
Recover from a back float or glide to a vertical position		<input type="checkbox"/>									
Roll from front to back		<input type="checkbox"/>									
Roll from back to front		<input type="checkbox"/>									
Arm and hand treading actions (in chest-deep water)		<input type="checkbox"/>									

Instructor's Name:	Participant's Name										
Date:		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Alternating leg action on front, 2 body lengths		<input type="checkbox"/>									
Simultaneous leg action on front, 2 body lengths		<input type="checkbox"/>									
Alternating arm action on front, 2 body lengths		<input type="checkbox"/>									
Simultaneous arm action on front, 2 body lengths		<input type="checkbox"/>									
Combined arm and leg actions on front, 2 body lengths		<input type="checkbox"/>									
Alternating leg action on back, 2 body lengths		<input type="checkbox"/>									
Simultaneous leg action on back, 2 body lengths		<input type="checkbox"/>									
Alternating arm action on back, 2 body lengths		<input type="checkbox"/>									
Simultaneous arm action on back, 2 body lengths		<input type="checkbox"/>									
Combined arm and leg actions on back, 2 body lengths		<input type="checkbox"/>									
Safety Topics		<input type="checkbox"/>									
Staying safe around water		<input type="checkbox"/>									
Recognizing the lifeguards		<input type="checkbox"/>									
Don't Just Pack It, Wear Your Jacket		<input type="checkbox"/>									
Recognizing an emergency		<input type="checkbox"/>									
How to call for help		<input type="checkbox"/>									
Too Much Sun Is No Fun		<input type="checkbox"/>									
Exit Skills Assessment*		<input type="checkbox"/>									
1. Enter independently, using either the ramp, steps or side, travel at least 5 yards, submerge to mouth and blow bubbles for at least 3 seconds, then safely exit the water. (Children can walk, move along the gutter or "swim.")		<input type="checkbox"/>									
2. While in shallow water, glide on front for at least 2 body lengths, then roll to back and float on back for 3 seconds, then recover to a vertical position.		<input type="checkbox"/>									

* All Preschool Aquatics Level 1 skills can be performed with support.





SKILLS CHECKLIST

Preschool Aquatics Level 2

Clear Form

Instructor's Name: Date:	Participant's Name	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Enter water by stepping in from the deck or low height (in shoulder-deep water)											
Exit water using ladder, steps or side (in chest-deep water)											
Bobbing, 5 times											
Open eyes underwater and retrieve submerged objects (in chest-deep water)											
Front glide, 2 body lengths											
Front float, 3 seconds											
Recover from a front float or glide to a vertical position (in chest-deep water)											
Back glide, 2 body lengths											
Back float, 5 seconds											
Recover from a back float or glide to a vertical position											
Roll from front to back											
Roll from back to front											

Instructor's Name: Date:	Participant's Name	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Tread water using arm and leg actions, 15 seconds (in shoulder-deep water)											
Combined arm and leg actions on front, 3 body lengths											
Finning arm action on back, 3 body lengths											
Combined arm and leg actions on back, 3 body lengths											
Safety Topics											
Staying safe around water											
Recognizing the lifeguards											
Don't Just Pack It, Wear Your Jacket											
Recognizing an emergency											
How to call for help											
Too Much Sun Is No Fun											
Exit Skills Assessment*											
1. Glide on front for at least 2 body lengths, roll to back, float on back for 15 seconds, then recover to a vertical position.											
2. Glide on back for at least 2 body lengths, roll to front, then recover to a vertical position.											
3. Swim using combined arm and leg actions on front for 3 body lengths, roll to back, float for 15 seconds, roll to front, then continue swimming on front for 3 body lengths.											

* All Preschool Aquatics Level 2 skills can be performed with assistance.



Modified (B) Course Skills Checklists





SKILLS CHECKLIST (B)

Parent and Child Aquatics Level 1

Instructor Name:											
Date:	Pair #										
Hug position											
Chin support											
Shoulder support on front											
Cuddle											
Hip straddle											
Shoulder support on side											
Cueing											
Getting wet with toys											
Getting wet kicking											
Enter water by lifting in											
<i>Enter water from a seated position – rolling over and sliding in</i>											
<i>Enter water by walking in</i>											
Out-of-water exploration											
In-water exploration											
<i>Hanging on to side of pool</i>											
Exit water by lifting out											
<i>Exit water by walking out</i>											
Exit water using a ladder											
<i>Blowing bubbles on the surface, 3 seconds</i>											

Instructor Name:											
Date:	Pair #										
<i>Blowing bubbles with mouth and nose submerged, 3 seconds</i>											
<i>Underwater exploration</i>											
<i>Submerging mouth, nose and eyes, 3 seconds</i>											
<i>Front float, 2 body lengths</i>											
<i>Front glide</i>											
<i>Recover from a front float or glide to a vertical position</i>											
<i>Back float, 3 seconds</i>											
<i>Back glide, 2 body lengths</i>											
<i>Recover from a back float or glide to a vertical position</i>											
<i>Roll from front to back</i>											
<i>Roll from back to front</i>											
<i>Turn toward pool side</i>											
<i>Passing from instructor to parent</i>											
<i>Leg action on front, 2 body lengths</i>											
<i>Arm action on front, 2 body lengths</i>											
<i>Combined movement on front, 2 body lengths</i>											
<i>Leg action on back, 2 body lengths</i>											
<i>Arm action on back, 2 body lengths</i>											
<i>Combined movement on back, 2 body lengths</i>											
Safety Topics											
The importance of wearing a life jacket											
How to call for help & the importance of knowing first aid and CPR											
Basic water safety rules											
General water safety around the home											

Continued on next slide



Parent and Child Aquatics Level 1

Continued from Previous Slide

Instructor Name:											
Date:	Pair #										
Recreational water illnesses											
Sun safety											
Exit Skills Assessments*											
1. <i>Enter water using either the ramp, steps or side, travel at least 2 body lengths, submerge to mouth and blow bubbles for at least 3 seconds, then safely exit the water.**</i>											
2. <i>Start in the water with support from the adult, travel at least 2 body lengths using the combined movement on front to get to the side, then safely exit the water.</i>											

*All Parent and Child Aquatics Level 1 exit skills can be performed with support or assistance as appropriate.

**Children can walk, move along the gutter or "swim."





SKILLS CHECKLIST (B)

Parent and Child Aquatics Level 2

Instructor Name:											
Date:	Pair #										
Hip support on front											
Hip support on back											
Back support											
Arm stroke position											
Enter water from a seated position											
Enter water from a seated position—rolling over and sliding in											
Enter water by stepping or jumping in											
Enter water using a ladder											
Enter water using stairs or ramp											
In-water exploration (in shallow water)											
Exit water using side of pool											
Exit water using steps or ramp											
Exit water using a ladder											
Open eyes and retrieve objects below the surface											
Open eyes and retrieve submerged objects											
Bobbing, 5 times											
Front glide, 2 body lengths											
Front glide to the wall, 2 body lengths											
Front front, 3 seconds											
Recover from a front float or glide to a vertical											

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Instructor Name:											
Date:	Pair #										
<i>position</i>											
Back glide, 2 body lengths											
Back float, 10 seconds											
<i>Recover from a back float or glide to a vertical position</i>											
Roll from front to back											
Roll from back to front											
Turn toward side of pool											
Passing from instructor to parent											
Drafting with breathing											
Leg action on front—alternating or simultaneous movements, 3 body lengths											
Arm action on front—alternating or simultaneous movements, 3 body lengths											
Combined arm and leg actions on front with breathing, 3 body lengths											
Leg action on back—alternating or simultaneous movements, 3 body lengths											
Arm action on back—alternating or simultaneous movements, 3 body lengths											
Combined arm and leg actions on back, 3 body lengths											
Water Safety											
Wearing a life jacket in the water											
Reaching assists											
Basic water safety rules review											
Safety at the beach and at the waterpark											
Water toys and their limitations											
Exit Skills Assessments*											
1. Enter water, glide on front at least 2 body lengths, roll to back, float on back for 10 seconds recover to a vertical position											

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Continued on next slide



Parent and Child Aquatics Level 2

Continued from Previous Slide

Instructor Name:											
Date:	Pair #										
<i>then travel to a position of safety.</i>											
2. <i>Glide on back for at least 2 body lengths, roll to front, recover to a vertical position, then travel to a position of safety.</i>											
3. <i>Swim using combined arm and leg actions on front for at least 3 body lengths, roll to back, float for 5 seconds, roll to front, continue swimming on front for at least 3 body lengths, then travel to a position of safety.</i>											

*All Parent Child Aquatics Level 2 exit skills may be performed with assistance or independently as appropriate. A position of safety could be hanging on the wall or exiting the water.





SKILLS CHECKLIST (B)

Preschool Aquatics Level 1

Instructor Name:						
Date:	Child #					
Enter water using ramps, steps or side						
Exit water using ladder, steps or side						
Blowing bubbles, 3 seconds						
Submerge mouth, nose and eyes						
Open eyes under water and retrieving submerged objects						
Front glide, 2 body lengths						
Recover from a front glide to a vertical position						
Back glide, 2 body lengths						
Back float, 3 seconds						
Recover from a back float to a vertical position						
Roll from front to back						
Roll from back to front						
Arm and hand treading actions (in chest-deep water)						
Turn toward pool side						
Alternating leg action on front, 2 body lengths						
Simultaneous leg action on front, 2 body lengths						
Alternating arm action on front, 2 body lengths						
Simultaneous arm action, 2 body lengths						
Combined arm and leg actions on front, 2 body lengths						
Alternating leg action on back, 2 body lengths						

Instructor Name:						
Date:	Child #					
Simultaneous leg action on back, 2 body lengths						
Alternating arm action on back, 2 body lengths						
Simultaneous arm action on back, 2 body lengths						
Combined arm and leg actions on back, 2 body lengths						
Water Safety						
Staying safe around aquatic environments						
Recognizing the lifeguards						
Don't Just Pack It, Wear Your Jacket						
Recognizing an emergency						
How to call for help						
Too Much Sun Is No Fun						
Exit Skills Assessment*						
1. Enter independently, using either the ramp, steps or side, travel** at least 5 yards, submerge to mouth and blow bubbles for at least 3 seconds then safely exit the water.						
2. While in shallow water, glide on front at least 2 body lengths, then roll to back and float on back for 3 seconds then recover to a vertical position.						

*All Preschool Aquatics Level 1 exit skills can be performed with support or assistance as appropriate. A position of safety could be hanging on the wall or exiting the water.

**Children can walk, move along the gutter or "swim."





SKILLS CHECKLIST (B)

Preschool Aquatics Level 2

Instructor Name:	Child #					
Date:						
Enter water by stepping in from deck or low height (in shoulder-deep water)						
After entering, turn around and face the wall (entry pt)						
Exit water using ladder, steps or side (in chest-deep water)						
Bobbing, 5 times						
Opening eyes under water and retrieving submerged objects, (in chest-deep water)						
Front glide, 2 body lengths						
Front float, 3 seconds						
Recover from a front float or glide to a vertical position						
Back glide, 2 body lengths						
Back float, 15 seconds						
Recover from a back float or glide to a vertical position						
Roll from front to back						
Roll from back to front						
Tread water using arm and leg actions, 15 seconds (in shoulder-deep water)						
Turn around						
Combined arm and leg actions on front, 3 body lengths						
Finning arm action on back, at least 3 body lengths						
Combined arm and leg actions on back, 3 body lengths						

Instructor Name:	Child #					
Date:						
Water Safety						
Staying safe around aquatic environments						
Recognizing the lifeguards						
Don't Just Pack It, Wear Your Jacket						
Recognizing an emergency						
How to call for help						
Too Much Sun Is No Fun						
Exit Skills Assessment*						
1. Glide on front at least 2 body lengths, roll to back, float on back for 15 seconds, recover to a vertical position then travel to a position of safety.						
2. Glide on back for at least 2 body lengths, roll to front, then recover to a vertical position, then travel to a position of safety.						
3. Swim using combined arm and leg actions on front for at least 3 body lengths, roll to back (CBP3), float on back for 15 seconds, roll to front, continue swimming on front for at least 3 body lengths, then travel to a position of safety.						

*All Preschool Aquatics Level 2 exit skills may be performed with assistance or independently as appropriate. A position of safety could be hanging on the wall or exiting the water.

Appendix B: Data Collection Tools

Pre-Participation Parent Surveys
Water Competence Assessment Form
Post-Participation Parent Surveys



Pre-Participation Parent Survey – Parent and Child Aquatics

Parent and Child Aquatics Pre-Participation Survey

Child's Name: _____

Date of Birth: _____ Level: 1 2

Gender: Please circle.

Male Female Non-binary
Transgender Other Prefer not to answer

- How would you rate your swimming ability? Please check one.
 - Non-Swimmer
 - Beginner swimmer
 - Intermediate swimmer (comfortable and/or safe in deep water)
 - Advanced swimmer (can swim multiple strokes efficiently)
- How would you rate your child's swimming ability? Please check one.
 - Non-Swimmer
 - Beginner swimmer
 - Intermediate swimmer
 - Advanced swimmer
- Has your child ever participated in group swim lessons before this session? Please check one and enter the number.
 - Yes** If yes, how many classes (in other words, how many days)? _____
 - No
- Has your child ever participated in private swim lessons? Check one and enter the number.
 - Yes** If yes, how many classes? _____
 - No
- What types of bodies of water does your child have easy and regular access to and experience with? Select all that apply.
 - Residential pools
 - Inflatable/Portable pool
 - Neighborhood pool
 - Splashpad
 - Waterpark
 - Pond or Lake
 - Ocean
- Which of the following skills can your child perform in the water without support or assistance from an adult or a flotation device? Check all that apply.
 - Enter the water
 - Float on front
 - Float on back
 - Submerge and control breathing, such as blowing bubbles or holding their breath
 - Turn around to face different directions or turn over from front to back
 - Paddle on the front
 - Paddle on the back
 - Exit the water

- As a parent/caregiver, how comfortable are you helping your child learn these skills? Select one.
 - Very comfortable
 - Somewhat comfortable
 - Somewhat uncomfortable
 - Very uncomfortable
- As a parent/caregiver, what do you expect to learn during this set of swim lessons? Select all that apply.
 - How to properly supervise and maintain safe behavior around water
 - Learn basic water safety information
 - How and when to use holding and support techniques for my young child
 - How to determine child's readiness to try basic skills and support their learning
 - How to select, properly fit and use a life jacket
 - How to perform basic water rescue skills, such as reaching and throwing assists
- At the end of this session, which of the following skills do you expect that your child will be able to do the following skills without support or assistance from an adult or a flotation device? Select all that apply.
 - Enter the water
 - Float on front
 - Float on back
 - Submerge and control breathing, such as blowing bubbles or holding their breath
 - Turn around to face different directions or turn over from front to back
 - Paddle on the front
 - Paddle on the back
 - Exit the water

Thank you for your participation in this research study!



Pre-Participation Parent Survey – Preschool Aquatics

Preschool Aquatics Pre-Participation Survey

Child's Name: _____

Date of Birth: _____

Gender: Please circle.

Male Female Non-binary
Transgender Other Prefer not to answer

- How would you rate your swimming ability? Please check one.
 - Non-Swimmer
 - Beginner swimmer
 - Intermediate swimmer (comfortable and/or safe in deep water)
 - Advanced swimmer (can swim multiple strokes efficiently)
- How would you rate your child's swimming ability? Check one.
 - Non-Swimmer
 - Beginner swimmer
 - Intermediate swimmer
 - Advanced swimmer
- Has your child ever participated in group swim lessons before this session? Check one and enter the number.
 - Yes If yes, how many classes (in other words, how many days)? _____
 - No
- Has your child ever participated in private swim lessons? Check one and enter the number.
 - Yes If yes, how many classes? _____
 - No
- What types of bodies of water does your child have easy and regular access to and experience with? Check all that apply.
 - Residential pools
 - Inflatable/Portable pool
 - Neighborhood pool
 - Splashpad
 - Waterpark
 - Pond or Lake
 - Ocean
- Check which skills your child can perform in the water without support or assistance from an adult or a flotation device. Check all that apply.
 - Enter the water
 - Float on front
 - Float on back
 - Submerge and control breathing, such as blowing bubbles or holding their breath
 - Turn around to face different directions or turn over from front to back
 - Paddle on the front
 - Paddle on the back
 - Exit the water
- As a parent/caregiver, how comfortable are you helping your child learn these skills? Check one.
 - Very comfortable
 - Somewhat comfortable
 - Somewhat uncomfortable
 - Very uncomfortable
- As a parent/caregiver, what do you expect to learn while your child is participating in this set of swim lessons? Check all that apply.
 - How to properly supervise and maintain safe behavior around water
 - Learn basic water safety information
 - How and when to use holding and support techniques for my young child
 - How to determine child's readiness to try basic skills and support their learning
 - How to select, properly fit and use a life jacket
 - How to perform basic water rescue skills, such as reaching and throwing assists
- At the end of this session, which of the following skills do you expect that your child will be able to do without support or assistance from an adult or a flotation device? Check all that apply.
 - Enter the water
 - Float on front
 - Float on back
 - Submerge and control breathing, such as blowing bubbles or holding their breath
 - Turn around to face different directions or turn over from front to back
 - Paddle on the front
 - Paddle on the back
 - Exit the water
- What water safety information do you expect your child to learn during this set of swim lessons? Check all that apply.
 - Staying safe around aquatic environments
 - How to recognize the lifeguards
 - When and how to wear life jackets
 - How to recognize an emergency and call for help
 - Sun safety

Thank you for your participation in this research study!



Water Competence Assessment Form

Child #: _____ Class (circle): PCA PSA Curriculum (circle): A B

Water Entry Component Sequence (WE)

1. No voluntary entry demonstrated
2. Caregiver- or flotation-supported feet-first entry
3. Unassisted voluntary feet-first entry

Water Exit Component Sequence (WX)

1. No voluntary exit demonstrated
2. Caregiver-supported exit to pool side
3. Flotation-supported or caregiver-assisted exit to pool side
4. Independent exit to pool side
5. Independent exit to pool side and exit from pool (over side, up stairs or ramp or ladder)

Breath Control Component Sequence (BC)

1. Reflexive breath holding when face is voluntarily submerged
2. Allowing water voluntarily in and/or around mouth resulting in shipping or spouting
3. Voluntary partial facial submersion (mouth and/or nose)
4. Voluntary full head submersion
5. Repeated voluntary submersion/ breath-holding in water
6. Extended voluntary breath holding and/or repeated rhythmic breathing with water safety skills

Back (Supine) Buoyancy/Flotation Component Sequence (BF)

1. No back flotation demonstrated
2. Back flotation with caregiver/instructor support
3. Back flotation with instructional flotation device support
4. Momentary (1-3 sec.) voluntary back flotation
5. Independent (>3 sec.) voluntary back flotation

Change in Body Orientation (turning around while vertical) Component Sequence (CBO)

1. No change in body orientation demonstrated
2. Caregiver/instructor-supported body orientation change (turning around)
3. Body orientation change (turning around) while supported by flotation device
4. Independent voluntary body orientation change (turning around)

Aquatic Readiness and Water Competence Assessment Profile

Component + # of levels	WE (3)	WX (5)	BC (6)	BF (5)	CBO (4)
Pre- Level # achieved					
Post- Level # achieved					
Change in levels (+ or -)					

Post-Participation Parent Survey – Parent and Child Aquatics

Parent and Child Aquatics Demographic Information

Do you consider yourself to be part of the Latinx population (Hispanic/Spanish/Latino descent)?

- Yes
- No
- Prefer not to answer

Do you consider your child that participated in these swim lessons to be part of the Latinx population?

- Yes
- No
- Prefer not to answer

What race/ethnicity do you consider yourself?

- White [or European-American]
- Black [or African-American]
- Native American or Alaska Native
- Asian-American or Pacific Islander
- Other (please indicate here) _____
- Prefer not to answer

What race/ethnicity do you consider your child?

- White [or European-American]
- Black [or African-American]
- Native American or Alaska Native
- Asian-American or Pacific Islander
- Other (please indicate here) _____
- Prefer not to answer

Which of the following includes your TOTAL household annual income before taxes in 2019?

- No income in 2019
- Less than \$15,000
- \$15,000 - \$24,999
- \$25,000 - \$34,999
- \$35,000 - \$44,999
- \$45,999 - \$54,999
- \$55,000 - \$74,999
- \$75,999 - \$99,000
- \$100,000 or more
- Prefer not to answer

How many people are supported by your household income, including you, your significant other (if you have one), children under your care, and anyone else partially or fully supported by this income whether or not they live with you?

Please continue to the other side to complete this survey.

Parent and Child Aquatics Post-Participation Survey

Child's Name: _____ Level: 1 2

1. How many classes did your child attend during this set of lessons? Please circle.
1 – 4 5 – 7 All 8 classes
2. After having completed this set of lessons, which skills can your child perform in the water without support or assistance from an adult or a flotation device? Select all that apply.
 - Enter the water
 - Float on front
 - Float on back
 - Submerge and control breathing, such as blowing bubbles or holding their breath
 - Turn around to face different directions or turn over from front to back
 - Paddle on the front
 - Paddle on the back
 - Exit the water
3. After having completed this set of lessons, how comfortable are you helping your child learn these skills? Select one.
 - Very comfortable
 - Somewhat comfortable
 - Somewhat uncomfortable
 - Very uncomfortable
4. Which of the following did you learn during this set of swim lessons? Select all that apply.
 - How to properly supervise and maintain safe behavior around water
 - Learn basic water safety information
 - How and when to use holding and support techniques for my young child
 - How to determine child's readiness to try basic skills and support their learning
 - How to select, properly fit and use a life jacket
 - How to perform basic water rescue skills, such as reaching and throwing assists
5. How much progress did your child make compared with your expectations? Select one.
 - Exceeded expectations
 - Somewhat exceeded expectations
 - Met expectations
 - Somewhat failed to meet expectations
 - Failed to meet to expectations
6. Do you plan to enroll your child in another session of swim lessons this summer? Select one.
 - Yes
 - No

Thank you for your participation in this research study!



Post-Participation Parent Survey – Preschool Aquatics

Preschool Aquatics Demographic Information

Do you consider yourself to be part of the Latinx population (Hispanic/Spanish/Latino descent)?

- Yes
- No
- Prefer not to answer

Do you consider your child that participated in these swim lessons to be part of the Latinx population?

- Yes
- No
- Prefer not to answer

What race/ethnicity do you consider yourself?

- White [or European-American]
- Black [or African-American]
- Native American or Alaska Native
- Asian-American or Pacific Islander
- Other (please indicate here) _____
- Prefer not to answer

What race/ethnicity do you consider your child?

- White [or European-American]
- Black [or African-American]
- Native American or Alaska Native
- Asian-American or Pacific Islander
- Other (please indicate here) _____
- Prefer not to answer

Which of the following includes your TOTAL household annual income before taxes in 2019?

- No income in 2019
- Less than \$15,000
- \$15,000 - \$24,999
- \$25,000 - \$34,999
- \$35,000 - \$44,999
- \$45,999 - \$54,999
- \$55,000 - \$74,999
- \$75,999 - \$99,000
- \$100,000 or more
- Prefer not to answer

How many people are supported by your household income, including you, your significant other (if you have one), children under your care, and anyone else partially or fully supported by this income whether or not they live with you?

Please continue to the other side to complete this survey.

Preschool Aquatics Post-Participation Survey

Child's Name: _____

1. How many classes did your child attend during this set of lessons? Please circle.
1 – 4 5 – 7 All 8 classes
2. After having completed this set of lessons, which skills can your child perform in the water without support or assistance from an adult or a flotation device? Select all that apply.
 - Enter the water
 - Float on front
 - Float on back
 - Submerge and control breathing, such as blowing bubbles or holding their breath
 - Turn around to face different directions or turn over from front to back
 - Paddle on the front
 - Paddle on the back
 - Exit the water
3. Which water safety information did your child learn during this set of swim lessons? Select all that apply.
 - Staying safe around aquatic environments
 - How to recognize the lifeguards
 - When and how to wear life jackets
 - How to recognize an emergency and call for help
 - Sun safety
 - My child didn't learn any of these
4. Which of the following did you learn during this set of swim lessons? Select all that apply.
 - How to properly supervise and maintain safe behavior around water
 - Learn basic water safety information
 - How and when to use holding and support techniques for my young child
 - How to determine child's readiness to try basic skills and support their learning
 - How to select, properly fit and use a life jacket
 - How to perform basic water rescue skills, such as reaching and throwing assists
 - I didn't learn any of these
5. How much progress did your child make compared with your expectations? Select one.
 - Exceeded expectations
 - Somewhat exceeded expectations
 - Met expectations
 - Somewhat failed to meet expectations
 - Failed to meet to expectations
6. Do you plan to enroll your child in another session of swim lessons this summer? Select one.
 - Yes
 - No

Thank you for your participation in this research study!



Thanks!

