Operations and Algebraic Thinking
Teaching Tips: Kindergarten
Using Best Instructional Practices with Educational Media to Enhance Learning

PBS Kids Lab
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School of Education
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pbskids.org/lab
Choosing Games to Address CCSS: Mathematics

Alignment to CCSS: English Language Arts

Alignment to ISTE Technology Standards: Students

Alignment to ISTE Technology Standards: Teachers

Try Out the Games

Teaching Routines

Preview the Game

- Museum of Tens
- Spaceship Power-Up
- Do You See My Seahorse?

Teaching Tips

- Museum of Tens
- Spaceship Power-Up
- Do You See My Seahorse?

Credits
## Choosing Games to Address CCSS: Mathematics

### Operations and Algebraic Thinking

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<th>Standard</th>
<th>Museum of Tens</th>
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<tbody>
<tr>
<td>K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.</td>
<td>★</td>
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<tr>
<td>K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.</td>
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<tr>
<td>K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3; 5 = 4 + 1$).</td>
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<tr>
<td>K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.</td>
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<tr>
<td>K.OA.A.5 Fluently add and subtract within 5.</td>
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## Vocabulary Acquisition and Use

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<tr>
<td>L.K.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on kindergarten reading and content.</td>
<td>★</td>
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<tr>
<td>L.K.5 With guidance and support from adults, explore word relationships and nuances in word meanings.</td>
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<td>L.K.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts.</td>
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## Alignment to ISTE Technology Standards: Students

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<tr>
<td><strong>2. Communication and Collaboration</strong></td>
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<tr>
<td>a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.</td>
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<td>d. Contribute to project teams to produce original works or solve problems.</td>
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<td><strong>4. Critical Thinking, Problem Solving, and Decision Making</strong></td>
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<tr>
<td>b. Plan and manage activities to develop a solution or complete a project.</td>
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<td><strong>5. Digital Citizenship</strong></td>
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<td>a. Advocate and practice safe, legal, and responsible use of information and technology.</td>
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<td>b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.</td>
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<td><strong>6. Technology Operations and Concepts</strong></td>
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<td>a. Understand and use technology systems.</td>
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<td>b. Select and use applications effectively and productively.</td>
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## Alignment to ISTE Technology Standards: Teachers

### 1. Facilitate and Inspire Student Learning and Creativity

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1. **Facilitate and Inspire Student Learning and Creativity**

   a. Promote, support, and model creative and innovative thinking and inventiveness.
   
   c. Promote student reflection using collaborative tools to reveal and clarify students’ conceptual understanding and thinking, planning, and creative processes.
   
   d. Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments.

### 2. Design and Develop Digital-Age Learning Experiences and Assessments

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2. **Design and Develop Digital-Age Learning Experiences and Assessments**

   a. Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity.
   
   b. Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress.

### 3. Model Digital-Age Work and Learning

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3. **Model Digital-Age Work and Learning**

   a. Demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations.
   
   b. Collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation.
   
   c. Communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats.

### 4. Promote and Model Digital Citizenship and Responsibility

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4. **Promote and Model Digital Citizenship and Responsibility**

   c. Promote and model digital etiquette and responsible social interactions related to the use of technology and information.
Try Out the Games

Museum of Tens

Spaceship Power-Up

pbskids.org/cyberchase/math-games/buzz-and-delete-save-day/#GarbageDumpBatteriesGame

Do You See My Seahorse?

NOTE: These links will take you away from the Teaching Tips. They will open a web browser that lets you play the featured game.
Teaching Routines

Maintain Brisk Pacing
Research demonstrates that “brisk” pacing is related to greater content coverage, increased motivation and engagement, and, in turn, higher levels of student achievement.

- Note the time allocated to each component of game play (Build Background, Get Ready to Play, Play the Game). Monitor the length of your teaching and children’s turns so that all activities are completed within the allocated time.
- Establish a predetermined system for calling on children to work at the whiteboard. For example, write each child’s name on a Popsicle stick and place the sticks in a jar. To call a child to the board, draw a stick from the jar. When a child’s name is selected, set that stick aside, leaving only the sticks of children not yet chosen.
- Invite all selected children to the whiteboard at once when more than one child will be playing.

Engage All Children
When children are highly focused and engaged, they attain higher levels of achievement.

- Position children so they do not block the screen when they stand at the whiteboard, so that everybody can see the images and game play.
- Involve all children in thinking about the correct answers even if it is not their turn at the whiteboard.
  - Use strategies such as “Turn and Talk.” For example, ask all children to tell a partner the answer they would choose, or if they agree/disagree with a stated choice.
  - When the child at the whiteboard gives an answer, invite all the others to show “thumbs up” if they agree with the answer or “thumbs down” if they disagree.
- Observe children’s understanding of key concepts. When most children demonstrate understanding by rapidly choosing correct responses, wrap up game play.

Support Independent Learning
When teachers notice and name the learning strategies children use, children are more likely to become strategic and independent learners.
Teaching Routines

Use Key Vocabulary Frequently
When children have many opportunities to hear and use new vocabulary words, they are more likely to acquire and use the words on their own.

- **Repeat key words as often as possible** during game play, as well as during other parts of the school day when use of these words is appropriate.
- **Ask children to use key words** while playing the games.
  - When children are at the whiteboard, encourage them to use key words to describe their actions. For example, “The **battery** with four **volts** should go in the box.”
  - When children are invited to Turn and Talk, encourage them to use key words. For example, “We need three more objects for the **display** in the **museum**.”

Mediate Game Play
When well-developed educational media programs are effectively joined with a sound classroom curriculum, children demonstrate high levels of motivation and engagement as well as notable increases in early literacy and mathematics skills and knowledge.

- **Load the game on the computer and minimize it before you begin the lesson.** This allows you to optimize instructional time by beginning game play as soon as you and the children are ready.
- **Preview the screen to explain what children will do.** Point out game features such as selecting objects, moving objects, and repeating the game instructions.
- **Quickly mute/unmute the sound by using the mute button** on the top row of the computer keyboard. You can also use the volume down/up buttons on the keyboard, or the volume controls on the interactive whiteboard, to adjust the sound.
- **If the touch function doesn’t work, use your computer to click on the item the child touches.**
- **Prepare for the worst!** Have a dry erase board or manipulatives available to carry out activities intended for the interactive whiteboard (such as using cubes to determine all the combinations of numbers that equal ten).
Preview the Game: Museum of Tens

Description
Players help George complete a variety of museum exhibits so that they display ten items. Every exhibit has two shelves that each hold five items. Spaces for the missing objects may be next to each other or apart, on the same shelf, or on both shelves.

In the first eight rounds, the exhibit is missing up to five items. In the next eight rounds, the exhibit is missing five to nine items. This pattern repeats if you continue playing.

When players select the wrong answer, Professor Wiseman tells them whether the number is too many or not enough. If players select the wrong answer again, she counts the empty spaces as they are highlighted.

The museum exhibits include a rotating array of vases, crystals, dinosaur eggs or fossils, ships, models of Earth or Saturn, and other objects.

Helpful Background
When a child selects an answer that is more than the number of missing items, up to two of the extra items drop into George’s arms. Since George never holds more than two items, the number in his arms doesn’t help determine how many extra there are in the wrong answer.
In this lesson, children will:

- solve addition problems within 10
- use “counting on to” and number facts strategies to solve math problems
- write number sentences to represent an addition problem
- learn new vocabulary, such as museum and display, and use these words in context
- use technology to learn, working individually and in groups

1. **Build Background**
   Conduct a whole-class activity that activates and builds children’s background knowledge.

2. **Get Ready to Play**
   Use the interactive whiteboard to preview the game with the whole class.

3. **Play the Game**
   Play the game as a whole-class or small-group activity.
### Build Background

**Time: 10 minutes**

**NOTE:** Open the SMART Notebook™ file called Blocks. Touch the replicating block and drag your finger to another part of the screen 10 times to create a set of 10 blocks. You will use this file along with manipulatives for this activity.

Children could play this game by counting only the number of missing items, a lower-level math skill that does not meet CCSS K.OA.A.4. These Teaching Tips focus on having children figure out how many more items are needed to equal 10. Some children may use manipulatives and a “counting on to” strategy to determine the answer. Others may use number facts, a strategy that all children should acquire over time.

Tell children that in the game they are going to play, they will need to figure out how many more objects they need to have 10 objects total. Help the class practice “counting on to” for a total of 10 objects:

- Give each pair of children a set of 10 math cubes or other manipulatives.
- Have each pair count their cubes and invite a few children to say how many cubes they have. To demonstrate that each group has 10, count the blocks on the whiteboard.
- Reinforce the focus of the lesson. Say: *We all have ten cubes, because all of the math problems we will solve in this game add up to ten.*
- Next, have each pair of children count 6 cubes and set the rest aside. Model this on the whiteboard.
- Then say: *We have six cubes, and we need a total of ten. Work with your partner to figure out how many more cubes you need to make a total of ten.*
- Observe as children work together. If they are figuring out the answer by counting the missing cubes, use the blocks on the whiteboard to review “counting on to”: counting on from 6 using their fingers or cubes—7, 8, 9, 10—to see that they need 4 more to get to 10.
- If children are having difficulty, repeat the activity once or twice, starting with a different number of blocks each time to “count on to.”
Get Ready to Play

Time: 5 minutes

Close the Blocks file. Launch the game to see the opening screen. Sweep your finger under the word Museum and say: In this game, Curious George is at a museum. Some museums are places where we can see and learn about special objects, like paintings, spaceships, and dinosaur bones.

Point out the objects in and around George’s backpack and name them. Explain that these are the kinds of items that may be on display, or shown, in the museum that George is visiting. Tell children that the game is called Museum of Tens, because all of the objects are supposed to be displayed in groups of 10. But some of the the objects are missing, so the display has empty spaces where they should be.

Mute the sound, then select PLAY to start the game. Point out and name the objects on display. Draw children’s attention to the empty space(s) on the screen, and tell them that they will need to figure out how many more objects are needed to complete the display of 10.

Unmute the sound and point to Professor Wiseman in the circle. Explain that when you touch or click on her, she will repeat the instructions. Click and listen together.

For this activity, children may use individual whiteboards. You can make these by putting a white piece of paper in a transparent sheet protector and providing dry erase markers. (Another option is for children to use paper and pencils.)

To start the game:
1. Make sure your computer is connected to the whiteboard and the Internet.
2. Find the game on your computer by going to pbskids.org/lab
3. Click on Games on the left.
4. Games are in alphabetical order.
5. When you find the game, select PLAY NOW.
Teaching Tips: Museum of Tens

Play the Game

Play this game as a teacher-led, Whole-Class activity if children need guided support:

• determining how many more are needed to make 10
• using “counting on to” and number facts to solve missing addend problems
• writing number sentences to represent an addition problem
• understanding and using the words museum and display
• playing a game collaboratively
• using common game navigation

Play this game as an independent, Small-Group activity if children understand...

• how to determine how many more are needed to make 10
• how to write number sentences to represent an addition problem
• the meaning of and how to use the words museum and display
• game navigation

...but need practice:

• using “counting on to” and number facts to solve missing addend problems
Teaching Tips: Museum of Tens

Play the Game: Whole-Class Activity

Time: 10 minutes

Provide children with individual whiteboards or paper and pencils. To support children’s vocabulary development, name the objects in each collection. Draw their attention to the screen and ask: How many [fossils] are on display?

• Point to each object and have children count together. On a flip chart, write the number of objects on display and have children write the number on their whiteboards.

• Say: We have [seven fossils]. Let’s figure out how many more [fossils] we need to have ten on display at the museum.

• On the flip chart, write a number sentence for the missing addend problem, such as: 7 + □ = 10.

• Have children work with a partner to figure out the answer. Encourage them to use a “counting on to” strategy with their cubes or to use number facts.

• Call on a pair of children to share their answer and strategy. Have one child come to the whiteboard to select their answer (whether it is correct or incorrect). If correct, Professor Wiseman gives positive feedback.

• If the answer is not correct, Professor Wiseman tells players to try again. Ask another pair of children to share their answer and strategy. Then have one child select the answer on the game screen.

• When the correct answer is reached, return to the number sentence on the flip chart and record the correct number in the box. Say: We had [seven fossils] and we added [three] more. Seven plus three equals ten.

• Have children write this number sentence on their whiteboards.

• Continue playing by selecting the green arrow. Have children continue using “counting on to” and number facts strategies and writing number sentences for each round.

When most children are using these strategies correctly, stop playing and review key concepts. Ask:

• How did we figure out how many objects we needed for a display of ten? (“counted on to,” used number facts)

• What new words did we learn as we played this game? (museum, display)

Tell children: Knowing the combinations of numbers that make ten helps us solve math problems quickly. Practice being a mathematician—when counting objects, think about how many more you would need to have ten.
Teaching Tips: Museum of Tens

Play the Game: Small-Group Activity

Time: 5–10 minutes

Before children play each round of the game, instruct them to write a number sentence with the number of objects in the display plus an empty box for the missing number equaling 10. Then have them figure out and write down the answer before selecting the answer on the screen.

As they play the game, check to see if their number sentences are correct and what strategy they are using to determine the answer. If they are guessing or counting the empty spaces, encourage them to use a “counting on to” strategy or number facts. To help strengthen their understanding, ask questions such as:

- What does the first number in your number sentence represent?
- How many objects in total does George need to complete the display for the museum?
- How did you figure out the number you needed to make ten?
- What other strategies could you use?
Preview the Game: Spaceship Power-Up

Description
Players help Buzz and Delete power up the Lil Wreaker spaceship with five pairs of batteries. Each pair equals 10 volts. In every round, there is only one pair on the conveyor belt with numbers that equal 10.

The same set of batteries will continue to appear on the conveyor belt until players choose the correct pair. When players place batteries in the box, the total number of volts is displayed. If a pair does not equal 10 volts, Delete tells players whether there are too many or not enough volts to power the Lil Wreaker.

After three wrong answers, the correct batteries are highlighted on the conveyor belt. When players select the correct pair, the game displays all the correct pairs that have been chosen so far, then moves to the next round. The game ends when players have found all five pairs of batteries that equal 10 volts (1+9, 2+8, 3+7, 4+6, 5+5).

Helpful Background
To play this game, children should have some experience figuring out pairs of numbers that add up to 10. The Curious George game Museum of Tens, featured in the previous lesson, provides useful practice.

Children can take as much time as they need to determine which batteries to place into the box, since the same set of batteries repeatedly scrolls by (in the same sequence) on the conveyor belt. This gives children ample opportunities to notice the number of volts on each battery and decide which two batteries will equal 10. The order in which children place the pair of batteries doesn't matter; for example, they can choose 1 and then 9 or vice versa.
In this lesson, children will:

- learn the commutative property of addition
- figure out how many more are needed to make 10
- develop math fluency through number facts
- write number sentences that equal 10
- learn new vocabulary, such as battery, power, volt, conveyer belt, and use these words in context
- use technology to learn, working individually and in groups

1. **Build Background**
   Conduct a whole-class activity that activates and builds children’s background knowledge.

2. **Get Ready to Play**
   Use the interactive whiteboard to preview the game with the whole class.

3. **Play the Game**
   Play the game as a whole-class or small-group activity.
Tell children that the game they are going to play is called Spaceship Power-Up, because they will choose batteries to "power up" the Lil Wreaker spaceship for Buzz and Delete. Show children examples of batteries and explain that they produce electricity, the power that makes devices “go.”

Using Turn and Talk, ask children to think of a toy or something else that requires a battery to work and to tell their partners. Then invite a few children to share their ideas. Affirm their answers and elaborate (e.g., Yes, a remote control car needs a battery to make the car move).

Next, explain that a volt is the amount of power, or energy, in the battery. Tell children that the higher the number of volts, the greater the energy, or power, the battery has. Point out that in this game they will need to pick two batteries that have a total of 10 volts. So they will need to think about the different combinations of numbers that add up to 10.

Develop their understanding of the commutative property of addition, i.e., when adding numbers, the order doesn’t matter.
• On the whiteboard or a flip chart, write: $6 + 2 = $ 
• Ask: What does six plus two equal? Call on a child to answer and write the correct response in the box.
• Next write: $2 + 6 = $ 
• Ask: What does two plus six equal? Call on a child to answer and write the correct response in the box.
• Point out that the totals for both number sentences are the same.
• Then, using Turn and Talk again, ask children to work with a partner to come up with two other numbers that add up to the same total when they change the order. Call on several pairs of children to respond.
• Explain that the same two numbers can always be added in any order and the total will stay the same.
Teaching Tips: Spaceship Power-Up

Get Ready to Play

Time: 5 minutes

Provide children with individual whiteboards. You can make these by putting a white piece of paper in a transparent sheet protector and providing dry erase markers. (Another option is for children to use paper and pencils.)

Prepare a flip chart that has five sets of blank number sentences that add up to 10, as shown.

Mute the sound and launch the game. As you point out key elements on the game screen, tell children:

- The batteries are on a conveyor belt, which moves things from one place to another.
- The numbers on the batteries tell you how many volts they have.
- To play the game, you need to figure out which two batteries add up to ten volts, then move them into the box at the top.
- The number next to the box tells you how many volts there are when you put in the batteries.
- The goal is always ten volts. The lightning symbol is used instead of the word volts.

Have children write one of the blank number sentences that equal 10 on their individual whiteboards. Encourage them to look at the batteries on the screen and think about which two batteries on the conveyor belt will add up to 10 volts. Tell them that when they play the game, they will write their answers in the number sentence.
Teaching Tips: Spaceship Power-Up

Play the Game

Play this game as a teacher-led, Whole-Class activity if children need guided support:

- understanding the commutative property of addition
- determining how many more are needed to make 10
- determining which pairs of numbers equal 10
- writing number sentences for two numbers that equal 10
- understanding and using the words battery, power, volt, and conveyor belt
- playing a game collaboratively
- using common game navigation

Play this game as an independent, Small-Group activity if children understand...

- the commutative property of addition
- how to determine how many more are needed to make 10
- the meaning and how to use the words battery, power, volt, and conveyor belt
- game navigation

...but need practice:

- determining which pairs of numbers equal 10
- writing number sentences for two numbers that equal 10
Teaching Tips: Spaceship Power-Up

Play the Game: Whole-Class Activity

Time: 10 minutes

- Unmute the sound. Tell children the number of one battery they will need. Move that battery into the battery box and have children fill in the first box in the number sentence with that number.
- Next, have children look at the batteries on the conveyor belt and figure out which one they need to add up to 10 volts. Have them write that number in the number sentence. Then have them hold up their whiteboards so you can see them.
- Invite a child to the whiteboard to say the answer. Ask the rest of the class to give a “thumbs up” if they agree, or “thumbs down” if they don’t. Have the child move the battery into the box then move aside so all children can see the screen.
- If the answer is not correct, Delete points to the total and says whether it’s too many or not enough volts to power the Lil Wreaker. The batteries will drop back onto the conveyor belt. Help the child use a “counting up to” strategy to figure out the right answer.
- When the correct answer is chosen, draw children’s attention to the number fact they just found; for example: That’s right. One number fact is that seven plus three equals ten.
- Write these numbers in the first blank number sentence on your flip chart, and point out how many more combinations of numbers there are that will equal 10.
- Have children erase the first two numbers in their number sentence.
- Repeat these steps until children have found all five pairs of numbers that equal 10. If you observe many children with incorrect answers, repeat the game to find all five combinations again. To provide a greater challenge, have children choose both batteries that they need in each round.

When most children have mastered the game, stop playing and review key concepts. Ask:
- How many pairs of numbers are there that equal ten? (Review the five combinations on the flip chart.)
- What did we learn about batteries and volts? (batteries help make things work; volts are how much power they have)

Tell children: To practice being a mathematician, have friends or family members hold up some fingers and see if you can figure out (without counting!) how many more fingers will make ten.
Teaching Tips: Spaceship Power-Up

Play the Game: Small-Group Activity
Time: 5–10 minutes

Before children play the game on their own, help them write five blank number sentences that add up to 10:

□ + □ = 10
□ + □ = 10
□ + □ = 10
□ + □ = 10
□ + □ = 10

As the children play, check that they are searching for the pair that makes 10 volts and not randomly choosing batteries to go in the box. Help them focus on picking pairs that equal 10 by asking questions such as:

• How many volts do the batteries need to add up to?
• How many number sentences have you written so far for pairs of batteries that add up to ten volts?
• How many more pairs of batteries do you need to find?

Prompt children to use key vocabulary by asking questions such as:

• Why do Buzz and Delete need batteries? (to power their spaceship)
• How much power do they need? (10 volts)
• What is the device that is moving the batteries along? (conveyer belt)
Preview the Game: Do You See My Seahorse?

Description
The swirly-whirly ocean has mixed up all the baby seahorses. Players help each father find his babies by selecting the number of seahorses (ranging from 1 to 10) that match the number on his belly.

The game has three levels:

**Easy:** As players select each seahorse, the babies count off until reaching the correct number.

**Medium:** Players choose which one of three groups of babies has the correct number. Each group is a different color. When players select a group, the babies count off.

**Hard:** Players choose two of the three groups (each a different color) that together add up to the correct number. When players select the right answer, it is shown as a number sentence on the screen (6 + 2 = 8).

The game ends after three rounds. Players can choose to play again, at the same level or a different level.

Helpful Background
The Easy level in this game provides counting practice. The Medium level reinforces cardinality. The Teaching Tips focus on the Hard level, which requires children to add two groups of seahorses together to get a specific total.

After children choose the first group of seahorses, the Cat in the Hat says how many more are needed for the correct total. If the first group children chose can’t be combined with another group to equal the total, they still need to pick a second group to continue game play.
In this lesson, children will:

- decompose numbers in more than one way
- count up to 10 objects in a scattered configuration
- determine how many more are needed to reach a specific total
- choose two addends that total a number within 10
- see addition problems represented with objects and as number sentences
- learn about seahorses
- learn new vocabulary, such as *swirly whirly*, and use these words in context
- use technology to learn, working individually and in groups

1. **Build Background**
   Conduct a whole-class activity that activates and builds children’s background knowledge.

2. **Get Ready to Play**
   Use the interactive whiteboard to preview the game with the whole class.

3. **Play the Game**
   Play the game as a whole-class or small-group activity.
Teaching Tips: Do You See My Seahorse?

Build Background

Time: 10 minutes

**NOTE:** Open two SMART Notebook™ files: Blocks and Vocab–Seahorses. The Vocab–Seahorses file will launch a video about seahorses. Pause the video, then minimize it to place it on the dock for easy access. Using the Blocks file, touch the replicating block and drag your finger to another part of the screen 10 times to create a set of 10 blocks.

For children to learn the most from this game, help them understand that numbers can be decomposed in more than one way. Use the set of blocks on the whiteboard along with manipulatives for this activity.

- Pass out 10 math cubes (or other manipulatives) to each pair of children.
- Have each pair hold up one cube. Say: *Work with your partner to make a total of five cubes. How many more do you need to have five cubes altogether?*
- Ask a few pairs of children to share their answers. If they answer correctly, say: *That’s right. One plus four adds up to five.*
- Notice and name the strategies children use to find the answer (“counting on to,” number facts).
- Model this combination of one block and four blocks on the whiteboard.
- Say: *Let’s see if we can find another pair of numbers that adds up to five.*
- Guide children to separate the cubes into another combination that equals five and show this on the whiteboard.
- Repeat this activity, choosing numbers greater than five but not more than ten, until most children are successful decomposing numbers in two or more ways.
- Close the Blocks file.
Get Ready to Play

Time: 10 minutes

Mute the sound and display the Vocab–Seahorses file, which features a YouTube video. (You can link directly to this video at www.youtube.com/watch?v=BdQlykGWpG4&noredirect=1.) After the video plays for five seconds, you can skip the ad. Pause the video and unmute the sound.

Tell children that the game they are going to play is called Do You See My Seahorse? Say: Let’s see what seahorses look like in real life. As you watch the video, notice how seahorses look and behave. Turn and tell your partner what you observe.

Make the video full screen and play the first minute. Then mute the sound and ask: What did you notice about seahorses? Call on a few children to share. If children do not notice the following details, point out that:
• Seahorses are small fish that got their name because they live in the sea and look like horses.
• They have small fins—sort of like little wings—including one by the tail.

Offer children some additional information about seahorses:
• Even though seahorses move their fins quickly, they are not very good or fast swimmers.
• They use their tails to hold onto plants in the water to rest.
• The males give birth to the baby seahorses.

Close the video and display the opening screen of the game. Tell children that the baby seahorses in this game got all tossed around by the swirly whirly ocean. Explain that when something swirls and whirs it turns around and around and around. Invite two children to demonstrate swirling and whirling. Ask the class to imagine what it might look like if the water in the ocean swirled and whirled, and what would happen if they were little fish in a swirly whirly ocean. Call on a few volunteers to share their ideas.

Explain that since the swirly whirly ocean mixed up all the baby seahorses, the fathers need help to find their babies. Each father wants to have the right number of baby seahorses.
Teaching Tips: Do You See My Seahorse?

Play the Game

Play this game as a teacher-led, **Whole-Class** activity if children need guided support:

- counting up to 10 objects in a scattered configuration
- choosing two addends that total a number within 10
- seeing addition problems represented with objects and as number sentences
- understanding some facts about seahorses
- understanding and using the words *swirly whirly*
- playing a game collaboratively
- using common game navigation

Play this game as an independent, **Small-Group** activity if children understand...

- counting up to 10 objects in a scattered configuration
- some facts about seahorses
- the meaning and how to use the words *swirly whirly*
- game navigation

...but need practice:

- choosing two addends that total a number within 10
- seeing addition problems represented with objects and as number sentences
Teaching Tips: Do You See My Seahorse?

Play the Game: Whole-Class Activity

Time: 10 minutes

Unmute the sound and select the play button. After the Cat in the Hat describes the game, instruct children to listen closely to the father and the Cat in the Hat once you select the green Hard button. Then mute the sound again.

- Point out the number on the father’s belly and explain that this is the number of seahorses they must find.
- On a flip chart, write a number sentence for the addition problem. For example: \( \square + \square = 6 \)
- Next, invite the class to count along with you as you count the number of baby seahorses the swirly whirly ocean tossed into each group. Write the number of seahorses in each group below the number sentence on the flip chart.
- Have children turn to their partners to figure out which two numbers add up to the total the father needs. They may use math cubes to help figure out the answer.
- Invite a pair to the whiteboard. Ask them to say the answer as a number sentence (4 + 2 = 6).
- Unmute the sound. Have one child touch the first group of seahorses and have the class count along. The Cat in the Hat will say how many more are needed. Have the second child touch the next group as the class counts along again. (Point out that children must wait until all the seahorses in the first group are counted before they can touch the second group.)
- If the answer is correct, point out the number sentence on the screen, and fill in the number sentence on the flip chart.
- Repeat these steps for each round. (NOTE: To continue playing after three rounds, select Play Again, then the Hard button.)

When most children have mastered the game, stop playing and review key concepts. Ask:

- What did we do to help the father find his babies? (figured out which two numbers added up to the total needed)
- What did we learn about seahorses? (they are fish that look like horses; they have small fins; they swim slowly)
- What does it mean to swirl and whirl? (turn around and around)

Tell children: Knowing different pairs of numbers that add up to the same number is important in mathematics. Ask a family member to name a number between four and ten. See how many pairs of numbers you can find that add up to that number.
As children play the game, check that they are using addition, not guessing, to choose the correct groups. Prompt them to use their math skills by asking questions such as:

- How many baby seahorses is the father trying to find?
- How many baby seahorses are in each group?
- Why did you choose those two groups of baby seahorses?
- How would you write the answer as a number sentence?
- What other pairs of numbers would equal the total you need?

Help children understand and use the language in the game as well as facts about seahorses. Ask:

- What happened to the baby seahorses? (They got mixed up in the swirly whirly ocean.)
- Why couldn’t the babies swim fast enough to stay together with their father? (They have small fins and aren’t good swimmers.)
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