IS IT POSSIBLE?

Is It Possible?

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You can use Poster 3
with this storybook.

LITERACY ELEMENTS

rhyming words: e.g.,
   day/tray, fly/try
question mark
period
comma

MATH CONNECTIONS

DATA MANAGEMENT AND
   PROBABILITY
using the language of
probability

WORDS TO DISCOVER

possible
impossible

ESL CONSIDERATIONS

The picture cards created
using BLM 42 will help
second language learners
make sense of the
language in the story.

Story Synopsis

This story about probability begins with a question about an impossible event, rolling a total of 10 on a single die. It then progresses through a series of questions and answers about events that seem impossible, but can actually occur: water becoming ice on a hot summer day—in a freezer, and a rock floating—in a boat. Children will have the opportunity to guess the answers to the questions posed.

Overall Learning Opportunities

Students will:
- demonstrate an understanding of probability and demonstrate the ability to apply probability in familiar day-to-day situations
- collect, organize, and describe data

Students will:
- use some conventions of written materials to help them understand what they read
- read aloud in a way that communicates the meaning
- express clear responses to written materials, relating the ideas in them to their own knowledge and experience

ACTIVITY MENU

Investigation: Chance, page 80

Guided Reading, pages 81-82

As a Group, pages 83–84

- *Possible or Impossible?*: exploring possible/impossible situations
- *Flipping Coins:* creating a tally chart to explore probability
- *Try It!* testing some story situations and explaining the results
- *Rhyme Words:* recognizing rhyme and reciting rhyming couplets

Home Connections, page 85

- BLM 37: exploring possibility through experimentation

Independent Work, pages 86–90

- *BLM 38:* rolling the die to explore and record probability
- *BLM 39:* creating situations that are possible and impossible
- *BLM 40:* exploring probability and creating a tally chart
- *BLM 41:* practising completing Yes/No questions
- *BLM 42:* reading short phrases and colouring appropriately

Chance

LEARNING OPPORTUNITIES

Students will:

- demonstrate an understanding that an event may or may not occur
- collect first-had data by performing simple experiments
- use mathematical language to describe probability

YOU WILL NEED

- dice
- small cubes
- masking tape or small round stickers

OBSERVING FOR ASSESSMENT

Listen to children as they share their results. Does the student:

- use mathematical language effectively to communicate observations and predictions?

TEACHING tip To keep the noise level down, have children roll the die onto a piece of newsprint or construction paper.

Some children may be interested in trying the activity again so that they can compare results.

Reading The Story

Read the story aloud. Ask children to think of other pages that might be included in this storybook. Ask:

➤ What other pages of possible and impossible events could be included in this book?

Refer back to pages 2 and 3, and ask:

➤ Why is it impossible to roll a 10 on the die?

➤ What numbers are possible to roll?

Starting the Investigation

Distribute a die to pairs or small groups of children. Have a discussion about the possible ways a die might land. Record all of the possible ways the die might land on chart paper. (It is possible to roll a 1, 2, 3, 4, 5, or 6.) Discuss the possibilities, asking questions such as:

➤ Suppose you roll the die 6 times. Do you think that each number will come up once?

➤ Do you think that it's likely that you'll roll the same number 6 times in a row?

➤ Suppose you roll the die a lot. Which number do you think will come up the most? Why?

Working on the Problem

Give pairs of children a die and **Blackline Master 38**, which is a recording sheet. Tell children they are to take turns rolling the die. Each time they roll, they should colour in a space on the graph to show what number was rolled. Explain that they stop rolling when one of the columns is full. The number that they roll the most is their "winning number." They then answer the question on the recording sheet.

BLM
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Sharing Solutions

On chart paper, list the numbers 1 to 6. Have each pair tell which number they rolled the most often. Record their responses as a tally on the chart. Ask:

➤ Did some numbers come up more often than others?

➤ Do you suppose that if you did this again the same number would win?

➤ Can you always predict what number you will roll?

Extension

Give children small wooden or plastic blocks or cubes and some masking tape or small round stickers. They will design their own dice. Show them how to put small pieces of masking tape or stickers on each face of the block. They then write a number of their choice on each face. They can present their die to their peers, explaining which numbers are possible to roll. They can create a graph similar to the one they used earlier, and then investigate how their die lands during a series of throws.

Setting the Scene

Engage children in a discussion about the meaning and use of "possible" and "impossible." Ask:

➤ Is it possible or impossible that you will have a birthday this year?

➤ Is it possible or impossible that the weather tomorrow will be hot?

➤ Is it possible or impossible for a dog to meow?

Invite the children to make up a possible/impossible question.

Tell children the title of the book. Focus their attention on the cover art and ask:

➤ What do you think the story will be about? Why do you think that?

Encourage many predictions.

Reading the Text

• Have the children turn to page 2. Ask:

➤ What are the pigs doing?

➤ Look at the die they're using. How many dots do you see on each of the 3 sides?

➤ How many sides can we **not** see?

Read the top of page 2 and ask:

➤ What are we trying to find out?

➤ Yes, we want to know if it's possible to roll a total of 10 on this die.

➤ What's your guess?

Demonstrate with a die so the children can come to a conclusion before seeing page 3.

Point to page 3. Say:

➤ Here are the other 3 sides.

➤ How many dots can we see?

➤ So, can you roll a 10?

➤ Is it possible or impossible to roll a 10?

Turn to pages 4–5. Ask:

➤ What are the pigs doing?

Read the possible/impossible question. Ask:

➤ What do you think?

Point to page 5. Ask:

➤ Is it possible or impossible for water to freeze on a hot summer day?

Turn to pages 6–7. Ask:

➤ What is the pig watching?

Read the possible/impossible question. Ask:

➤ What do you think? Is it possible or impossible?

Point to page 7. Ask:

➤ Is it possible or impossible?

Turn to pages 8–9. Ask:

➤ Is it possible for a cat to run as fast as a car?

Point to page 9. Ask:

➤ What kind of cat is that?

Turn to pages 10–11. Say:

➤ In the picture, you can see the pigs throwing stones into the water. What will happen to the stones?

➤ What if they were bigger stones? Would they float?

Point to page 11. Say:

➤ The answer is in the picture.

Turn to pages 12–13. Ask:

➤ What season is it? How do you know?

➤ What does the question ask?

➤ What's your guess—is it possible or impossible?

Point to page 13. Ask:

➤ Possible or impossible? How?

OBSERVING FOR ASSESSMENT

During independent reading, observe and make note of the student's specific reading behaviours. Does the student:

• show an interest in reading the book independently?

• take the time to look at the pictures and to enjoy the fun of the text?

• subvocalize or vocalize when reading silently?

TEACHING tip

Record the "possible" and the "impossible" questions. Add more questions over the course of a few weeks. Make a book (or two books) of the questions.

Turn to pages 14–15. Ask:

➤ What are the pigs trying to do?

➤ Are they succeeding or not succeeding?

➤ What's the question? What do you think?

Turn to page 16. Ask:

➤ What's the answer?

➤ Do you agree?

➤ Now it's your turn to read the story on your own.

• Have the children read the whole book independently.

After Reading

Invite children to talk about something that "once upon a time" was impossible for them to do and then, one day, they found that it was possible—and they did it. Ask:

➤ Do you know what made the impossible a possible thing for you?

Revisit the Story

Discuss the story using open-ended prompts to engage children in talk. Ask:

➤ How did you enjoy this story?

➤ Do you have a favourite illustration? Which one? Why?

➤ Of all the questions in the story, which one did you like best? Why?

➤ Were there any questions that tricked you?

Engage children in recalling specific information from the selection. The story asks the children to go beyond the literal interpretation and to use their imagination. Take the children through each of the questions and discuss why some that seem impossible really are possible, while others really are impossible.

Focus children on the way the story is told through language. Invite each student to choose a favourite question from the book and to practise reading it aloud, using the proper inflection and observing the question mark. Provide a few examples so their attempts don't become excessively exaggerated.

Using **Blackline Master 41**, challenge children to create their own Yes/No statements. When the children are finished, encourage them to practise reading their sentences before reading them aloud to a small group.

BLM
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Reinforce the Story

Have children reread the book chorally, with a focus on observing the punctuation: question marks, periods, and commas.

Once children are very familiar with the story, invite them to colour pictures using **Blackline Master 42**.

BLM
Page 90

Activity: Possible or Impossible?

Refer to *Is It Possible?* and ask:

➤ What is impossible for pigs to do?

➤ What does it mean that it is impossible for them to fly?

Create a chart with the headings Impossible to Fly and Possible to Fly. Ask:

➤ What animals can you think of to add to the chart?

Record responses. When there are several entries ask:

➤ What is easier to think of, animals that can fly or animals that can never fly?

Direct children to think of themselves. Ask:

➤ Is possible for you to fly?

Some children will say it's possible in an airplane, while others will say it's impossible because they will interpret the question as meaning "on their own." Continue the discussion by asking:

➤ What is impossible for you to do?

As children offer ideas, ask:

➤ Is that really impossible? Will it always be impossible for you to do?

Through this discussion you might also introduce the words "likely" and "unlikely."

Extension

Use **Blackline Master 39** to have children draw or write about situations that are possible and impossible.

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LEARNING OPPORTUNITIES

Students will:

• collect first-hand data by performing simple experiments

• use mathematical language to describe probability

YOU WILL NEED

• pennies

• colouring materials

• dull pencils

• paper clips

OBSERVING FOR ASSESSMENT

Does the student:

• keep an accurate tally of the flipped coins?

• describe the coin flips by using vocabulary such as: likely, equally likely, possible, impossible?

Activity: Flipping Coins

Show children a penny. Ask:

➤ Is it possible for this penny to land heads?

➤ Is there any other possible way for the penny to land?

Have children predict the outcome of a coin flip. Ask:

➤ Do you think the coin will land heads or tails?

Flip the coin and have a volunteer tell how it landed. Repeat several times. Then ask children if they think that the coin is likely to land heads or tails. Discuss their ideas.

Give pairs of children coins. Show them how to create a tally so that they can record coin flips. Have them flip the coin 10 times and then meet so they can share results. Ask:

➤ Do you think that heads or tails is more likely or do you think they are equally likely?

Discuss responses and then have children repeat the coin flips, this time flipping and recording 20 times. Meet to discuss the outcomes.

Extension

Blackline Master 40 has a circle divided into 2 equal parts. Have children colour each part a different colour.

Page 88

Show how to make a spinner. Hold a paper clip in the centre of the circle with the point of a pencil. Flick the paper clip with your fingers.

Model how to record in tally form.

Meet to discuss results.

blue	red
IIII	JHT II

As a Group

Activity: Try It!

For each activity, invite a child to read the appropriate *Is It Possible?* question to the group. Encourage the children to talk about the process, what they observe, and why it's happening.

• Have children work in pairs with 1 die for each pair. Have them roll the die 5 times. Each time they roll the die, have them guess the number of dots on the face/side they can't see. Is it possible or impossible to know for sure what the unseen number is? (Opposite faces on a die always add up to 7.)

• Use the ice-cube tray from the staffroom freezer. Fill the tray with water and encourage children to guess how long it will take the water to freeze into ice. Record their responses and time the actual process.

• One at a time, drop several stones of different sizes into some water (using a dishpan or the classroom sink) and observe what happens. Then put the stone on a toy boat and observe.

Extension

Reverse the activities above:

• Make a die that **does** roll a 10. (A wood cube makes an excellent die.)

• Melt the ice in the ice-cube tray. Encourage children to guess how long it will take to melt and compare with the length of time it took to freeze.

• Increase the size of the stone you put on the toy boat until it sinks. Talk about why.

Activity: Rhyme Words

Invite the children to go through the story to find all the words that rhyme. As they call out the pairs, make a list. Have them close their eyes and listen to the rhymes as you say them: die/try, day/tray, sky/butterfly, car/far, float/boat, year/here, and fly/try.

Continue by creating some rhyming couplets, emphasizing the rhyming words:

➤ I would die to try.

➤ I want a tray today.

➤ A butterfly is in the sky.

➤ It's not far in a car.

➤ You can float a boat.

➤ In a year they'll be here.

➤ You can try to fly.

Play with the list by reading them bottom to top, middle to bottom, and back to top.

Extension

Clap the beat as you read. Invite the children to join in with the clapping and the recitation.

Then, read the sentences from the middle to the end, and from the beginning to the middle, for example:

➤ In a car, it's not far.

➤ A boat you can float.

➤ In the sky is a butterfly.

Is It Possible?

Dear Family,

We've enjoyed reading the book *Is It Possible*? This storybook is part of a series called *Side By Side*. This series connects mathematics and language through reading. Spending time reading and doing math activities at home helps your child develop solid skills and concepts. Enjoy reading the story with your child.

Choose some or all of these activities to enjoy together:

❑ Play the "Now That's Impossible!" game. The first player states something that is possible for an animal to do, such as "It's possible for a dog to catch a ball." The second player then states something that's impossible, such as "It's impossible for a dog to cook a good meal." Keep taking turns so that you both have a chance to give possible and impossible statements. Try to think of outrageous impossible statements to make the game funny.

❑ Review with your child all the possible ways a die can land when you roll it. Each of you then chooses one of the numbers from 1 to 6. Take turns rolling the die. You score a point each time the die lands on your chosen number. After 20 rolls, see who has the most points. Then start over by choosing different numbers and playing again.

❑ In the following game, your child will think about the probability of pulling different types of coins out of a container (based on how many of each type of coin there is to choose from). Start by getting a small container that you cannot see through (such as a margarine container). Put 3 pennies and 1 nickel in the container. Ask your child questions such as these: "Is it possible to pull a penny out of the container?" "Is it possible to pull a nickel out of it?" "What about a dime? Is it possible to pull one out?"
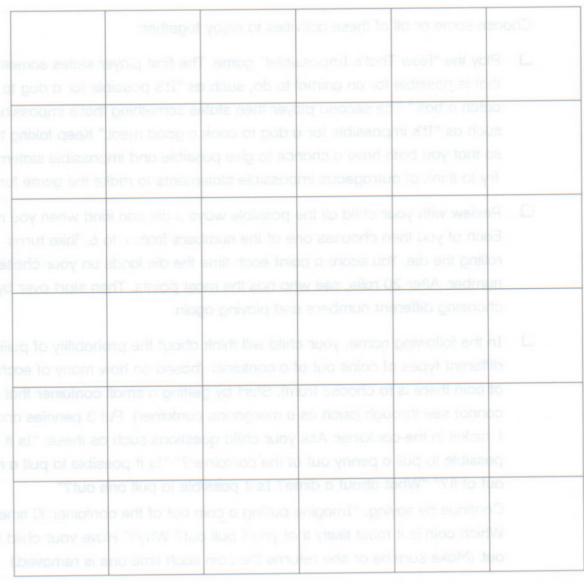Continue by saying: "Imagine pulling a coin out of the container 10 times. Which coin is it most likely that you'll pull out? Why?" Have your child find out. (Make sure he or she returns the coin each time one is removed.)

Remember to send the storybook back to school with your child.

Is It Possible?

My name is _____.

Roll the die. Colour a square to show how it lands.
Which number did you roll most often? _____

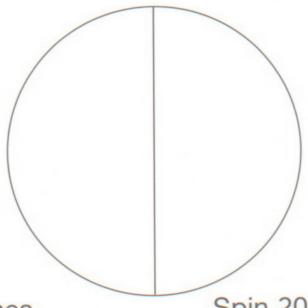|				

My name is _____.

I think this is possible.

I think this is impossible.

Is It Possible?

My name is _____ .

Colour each part of the spinner a different colour.

Spin 20 times.

Tally each spin.

Spin 20 times again.

Tally each spin.

First colour	Second colour
_____	_____

First colour	Second colour
_____	_____

Is It Possible?

My name is _____.

Complete the sentences.

1. Yes, a tree can _____

    _____

2. Yes, I like to _____

    _____

3. Yes, a pig can _____

    _____

4. No, today is not _____

    _____

5. No, a cheetah is not _____

    _____

6. Yes, I love _____

    _____

My name is _____ .

Colour interesting pictures.

a die	an ice-cube tray
a yellow caterpillar	a butterfly
a rock	a boat
a yellow flower	a pink flower