

# LESSON PLANS: ONTARIO

## Grade 4: Data Management and Probability Experimenting with Probability

 45 MINS

powered by

 Mathletics

### Overall Curriculum Expectations:

- Predict the results of a simple probability experiment then conduct the experiment and compare the prediction to the results.

### Specific Curriculum Expectations:

- Predict the frequency of an outcome in simple probability experiment, explaining their reasoning; conduct the experiment; and compare the result with the prediction.
- Determine through investigation, how the number of repetitions of a probability experiment can affect the conclusions drawn.

### Introduction to Lesson

 10-15 MINS

**Discuss with students what is meant by the terms likely and unlikely.**

- In the Animated Math Dictionary, look up the term "Probability".
- Show students the chart and have them come up with different real-life scenarios that could be likely or unlikely.
- Table groups should come up with one example for each possibility on the chart.
- Discuss ideas.

**Create spinners as a class.**

- Using the Grade 4 eBook "Chance and Data" click on Chance, go to page 4, and copy this page for each student.
- Have students cut and colour the spinners to use for the probability unit.

### ITEMS NEEDED

- ✓ Mathletics teacher login
- ✓ Interactive whiteboard
- ✓ Mathletics eBook handouts
- ✓ Die
- ✓ Counters
- ✓ Spinners
- ✓ Cards
- ✓ Coins

### ASSESSMENTS

- ✓ Assess spinners and questions.
- ✓ Self-assess/peer assess spinner work.
- ✓ Group work and participation.

### ACCOMMODATIONS/ MODIFICATIONS

- ✓ Ability/levelled partners.
- ✓ Limit the number of questions on the spinner handout.
- ✓ Teacher can play the "Roll and Release" game with students who need extra support.

### EXTENSION OF LEARNING

- ✓ Create a probability game. Students should create their own probability game of chance. (Dice game, spinners, cards, colours, etc.). They can then present this game to a younger grade or have a math fair.
- ✓ Curriculum activities
- ✓ "Rainforest Maths," Grade 4: chance/probability activities.

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### The Lesson

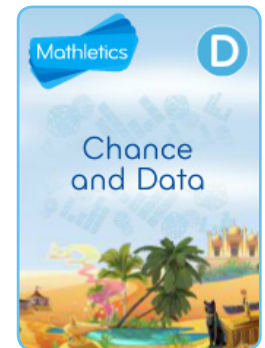
 30-35 MINS

#### eBook: Spinners

- Students should use their spinners and make a prediction about the possibility of landing on a specific colour. Have students write down their predictions using the handout on page 5. **Prompting Questions:** Do your chances change with the number of spins? How many times would you expect to land on red? Students can then conduct their experiment by spinning the spinner and recording their results. Ask students, How did your results change from your predictions? Were your predictions correct? Why or why not? What did you learn about your predictions?

#### Problem Solving: Combinations/Outcomes


- On the interactive whiteboard, click on **Demonstrations > Problem Solving > Combinations > I-scream Lady**.
- Work through the problem solving game. Or, have students log into their student consoles and try this game individually. Ask students, "What strategies did you use to determine the possible outcomes?", "If I don't like chocolate, how many other possible choices do I have?"



#### eBook: Roll and Release

- Students will need 2 dice and 12 counters for this game.
- In **eBooks > Grade 4 > Chance and Data** click on **Chance**.
- Print and copy the "Roll and Release" game on pages 10–11 for each student. Students can play this game in pairs and should make a prediction about which prisoner they think will be released first.
- Ask students, Does one counter have a better chance of being released than others? Do they all have a fair chance? What strategy are you using? Is there a way to determine the expected outcome for both dice?
- Students can play this game multiple times. Have students reflect on their learning, and determine where they should put their counters next time, based on what they learned in the previous game. Have partners discuss their thinking about fairness and what numbers are more likely or less likely to be rolled.

### After the lesson

 5-10 MINS

- Use one of the one-page assessments to determine where the students are currently at with the concepts of "likely" and "unlikely", and with predicting frequency of an outcome and conducting a probability experiment.
- Go to eBooks > Grade 4 > Chance and Data.
- Click Assessment.
- There are simple, concise rubrics to use at the bottom of each page



For more information contact our friendly team...

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