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Using Percents to Describe Probabilities

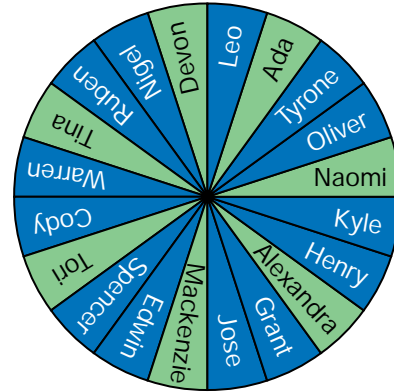
You will need

- spinner with 20 sections
- die

Goal

Conduct experiments and use percent to describe probabilities.

There are 20 students in a class: 13 are boys and 7 are girls. The teacher makes a spinner with all of their names on it. Each time she wants to call on a student, she spins the spinner to decide whom to call on.



? **What percent describes the probability that the teacher will call on a girl?**



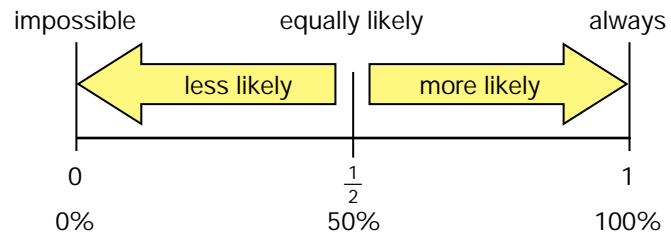
Kurt's Strategy

I need to spin the spinner many times.

Since I want to answer with a percent, I will spin 10 times. Then the probability will be a number of tenths. Tenths are easy to rename as hundredths and then as percents.

- Colour your spinner like the one shown. Spin it 10 times. Record your results in a tally chart.
- Which phrase best describes your probability of spinning a girl's name?
 - very unlikely • unlikely • very likely • likely
- Place the event from Part B on a probability line.
- Describe the probability from Part B as a fraction.
- Describe the probability from Part B as a percent.
- Conduct the experiment again. Repeat Parts B to E using the combined data for 20 spins.
- What percent describes the probability that the teacher will call on a girl?

Spin	Results
girl	
boy	



Reflecting

1. Why might you have expected the probability for calling on a girl to be less than 50% but greater than 25%?
2. What percents might describe each of these probabilities?
a) impossible b) equally likely c) very likely
3. Why might someone choose to use percents instead of fractions to describe probabilities?

Checking

4. Describe the probability that the teacher will call on a boy using words, a fraction, and a percent. Use your data from the experiment.

Practising

5. Roll a die 20 times. Record each roll and the probability of each event as a percent.
a) rolling 5 c) not rolling a 4, 5, or 6
b) rolling an even number d) rolling a 10
6. Robert reported that the probability of winning a certain game was 30%. How many times would you expect to win in each of these situations?
a) if you play 100 times c) if you play 10 times
b) if you play 50 times d) if you play 25 times
7. Predict whether each probability is closer to 10%, 50%, or 90%. Then test by rolling a die 20 times and reporting the probability as a percent.
a) the probability of rolling a number less than 6
b) the probability of rolling a 2
c) the probability of rolling a number greater than 4
8. Jaspreet and Kaden are playing a game. What should Jaspreet's probability of winning be if the game is fair? Explain.
9. Make up an experiment with dice where you predict the probability of a particular event as about 30%. Test your prediction with an experiment.

