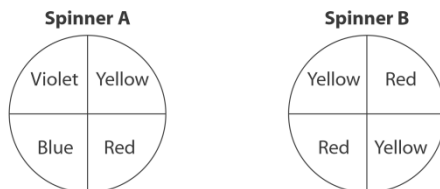


Lesson 7.6: Tree Diagrams

1. A popular game at the winter carnival is a spinner game called *Tropical Orange*. To play the game, a player spins the pointer on each of the spinners. To win, a player must get red on one spinner and yellow on the other spinner, because red and yellow make orange. Your teacher will give you blank spinners. Use an open paper clip as a pointer.



- Make these spinners. Play the game 20 times. Record your results. How many times did you make orange?
 - Combine your results with those of 9 other classmates. How many times was orange made in 200 trials?
 - Use a tree diagram to list the possible outcomes for making orange.
 - What is the theoretical probability of making orange?
 - How do the probabilities in parts b and d compare?
2. A regular tetrahedron has four faces labelled 1 to 4. A die is labelled 1 to 6. An experiment is: roll the tetrahedron and record the number on its face down, roll the die and record the number on its face up.
- Draw a tree diagram to determine the possible outcomes.
 - Find the probability of each event.
 - rolling two even numbers
 - rolling two numbers whose sum is 6
 - rolling a 4
 - rolling two numbers whose difference is 0 or 1
3. Here is a spinner game called *Sum Up*. To play the game, a player spins the pointer on each spinner and then finds the sum of the two numbers. Your teacher will give you blank spinners. Use an open paper clip as a pointer.
- List the possible sums.
 - Play the game 20 times. Record the results.
 - Combine your results with those of 4 classmates. What is the experimental probability of getting each sum?
 - 9
 - 6 or 8
 - 5
 - Draw a tree diagram to list the possible outcomes.
 - What is the theoretical probability of getting each sum in part d?
 - Compare the theoretical and experimental probabilities of the events in part d. What do you think might happen if you carried out this experiment 1000 times?

