



In these activities you will find the probability of an outcome involving compound events. After completing the activities, discuss and/or present your findings to the rest of the class.



Activity 1 [Page 1.3]

1. A group of students was trying to decide which two colors they should use for the border of their poster and for the color of the text: Avocado, Blue, or Canary Yellow. They decided to put the three colors in a bag and have the teacher draw one for the color of the border, then replace the color and draw again for the color of the text.
 - a. Predict what the tree will look like for this situation.

Select > **Outcomes** > **Stage 1** > **Three**. Select the correct probability and mark the branches representing the colors for the border with the correct probabilities. Then select > **Stage 2** > **Stage 2** and mark the branches representing the colors for the text with the correct probabilities.

- b. If A stands for Avocado, B for Blue and C for Canary Yellow, highlight the branches that show the border as Blue and the text as Canary Yellow. Describe the cells that correspond to those colors and the probability of getting that outcome.
 - c. What is the probability that the two colors on the poster are Avocado and Canary Yellow? Explain your reasoning.
 - d. Ryan says that the probability that Blue will be one of the colors is $\frac{1}{3}$. What would you say to Ryan?



- e. What is the probability that the two colors are Blue and Canary Yellow? Explain your reasoning.
- f. What is the probability that exactly one of the colors (the border or the text) is either Blue or Canary Yellow? Explain your reasoning.
- g. What is the probability that neither of the choices is canary yellow? Explain your reasoning.



Activity 2 [Page 1.5]

1. Student can choose three classes for 1st period: Art, Biology, Civics; they can choose from four different classes for 2nd period: English, French, Geometry, Health. Set up the table and tree and use either to find the probability a student has
- Art 1st period then Geometry
 - English 2nd period
 - no Biology
 - Civics and English or French



Activity 3 [Page 2.4]

1. Go to page 2.4. The diagram represents a compound event where the first event is having a boy or a girl and the second event is drawing the name for the baby from a hat containing the names Eden, Francis, or Geert. Fill in the probabilities for each outcome.
 - a. Select the branch for having a boy named Francis. What fraction of the whole rectangle is the area of the shaded region? Explain your reasoning.
 - b. How else could you find the area of the shaded rectangle?
 - c. What is the probability of a boy named Francis?
 - d. Suppose you were interested in representing a girl named either Geert or Eden in the large rectangle. Make a conjecture about which of the smaller rectangles will be shaded and what fraction of the total area that will be. Then explain how you would use the tree diagram to find the probability of a girl named Geert or Eden.
2. A hospital survey showed that the most popular names for a baby girl were Sophia, Emma, Olivia, and Ava. The most popular middle names were Grace, Rose, and Elizabeth. Answer the following questions; use the TNS activity to check your reasoning. If the parents at the hospital choose from the most popular first and second names, what is the chance their daughter
 - a. will be named Ava Elizabeth?

