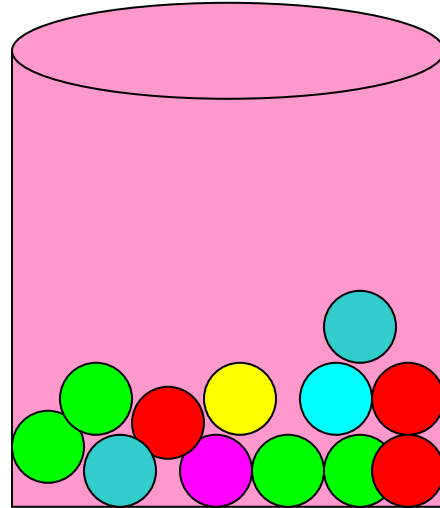
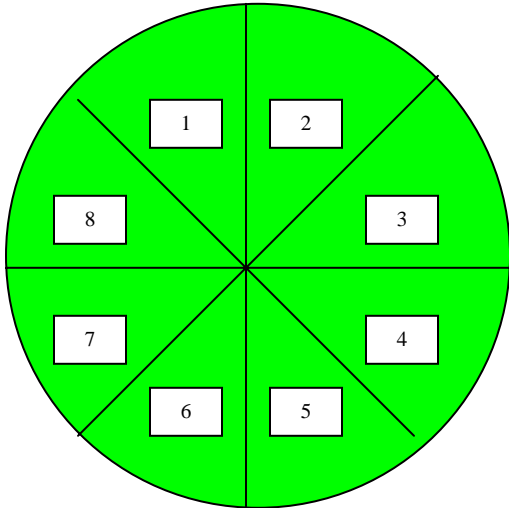


**Lesson: Enrichment for Independent and Dependent Events**

**Sixth Grade Objective:** 4.04 Determine and compare experimental and theoretical probabilities for simple and compound events.

4.05 Determine and compare experimental and theoretical probabilities for independent and dependent events.



**Review.**

1. What is the probability of spinning a 3?
2. What is the probability of pulling out a green marble?
3. What is the probability of spinning an even number and pulling out a blue marble?
4. If you pull out one marble and leave it and then choose another, what is the probability of pulling a red then yellow?
5. What is the probability of spinning a 1, 2 and 8 and pulling a purple marble?

**Check your answers**

1.  $\frac{3}{8}$
2.  $\frac{4}{12} = \frac{1}{3}$
3.  $\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$
4.  $\frac{3}{12} \times \frac{1}{11} = \frac{3}{132} = \frac{1}{44}$
5.  $\frac{3}{8} \times \frac{1}{4} = \frac{1}{32}$

**ACTIVITY 1:**

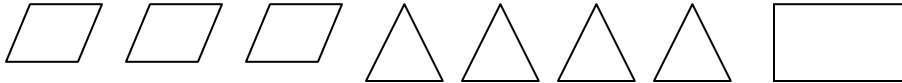
Stephen was told to clean out his closet. He found several shoes that did not have pairs: two sandals, three sneakers, five dress shoes and a slipper. He put all of them in a box. Stephen also found pairs of socks that he put in a different box: one pair of blue, two pairs of white and four pairs of black. Stephen then organized all of his belts in a different box: two brown, one black and four tan. Find the probability for each event:

P(sneaker, blue socks, black belt)

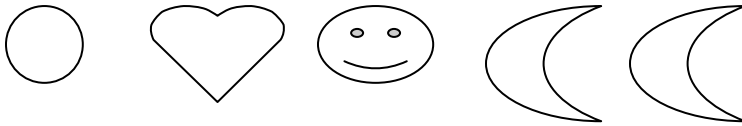
P(sandal, white socks, tan belt)

P(slipper, black socks, brown belt)

**ACTIVITY 2:**



**A. If you were to place these shapes in a bag and pull one out and not replace it then pull another, what is the probability of pulling a triangle then a square?**



**B. If you were to place these shapes in a bag and pull one out and not replace it then pull another, what is the probability of pulling a heart and then a moon?**

**ACTIVITY 3:**

**Print and cut out the above shapes and determine the experimental probability for activity 2. Compare the theoretical results to your experiment. Were they correct?**

**Extra Practice!**

<http://classroom.jc-schools.net/basic/math-prob.html>

**CHECK YOUR ANSWERS!**

**ACTIVITY 1:**

P(sneaker, blue socks, black belt)

$$\frac{3}{11} \times \frac{1}{7} \times \frac{1}{7} = \frac{3}{539}$$

P(sandal, white socks, tan belt)

$$\frac{2}{11} \times \frac{2}{7} \times \frac{4}{7} = \frac{8}{539}$$

P(slipper, black socks, brown belt)

$$\frac{1}{11} \times \frac{4}{7} \times \frac{2}{7} = \frac{8}{539}$$

**ACTIVITY 2:**

A.  $\frac{1}{2} \times \frac{1}{7} = \frac{1}{14}$

B.  $\frac{1}{5} \times \frac{1}{2} = \frac{1}{10}$

**ACTIVITY 3:**

Answers will vary.