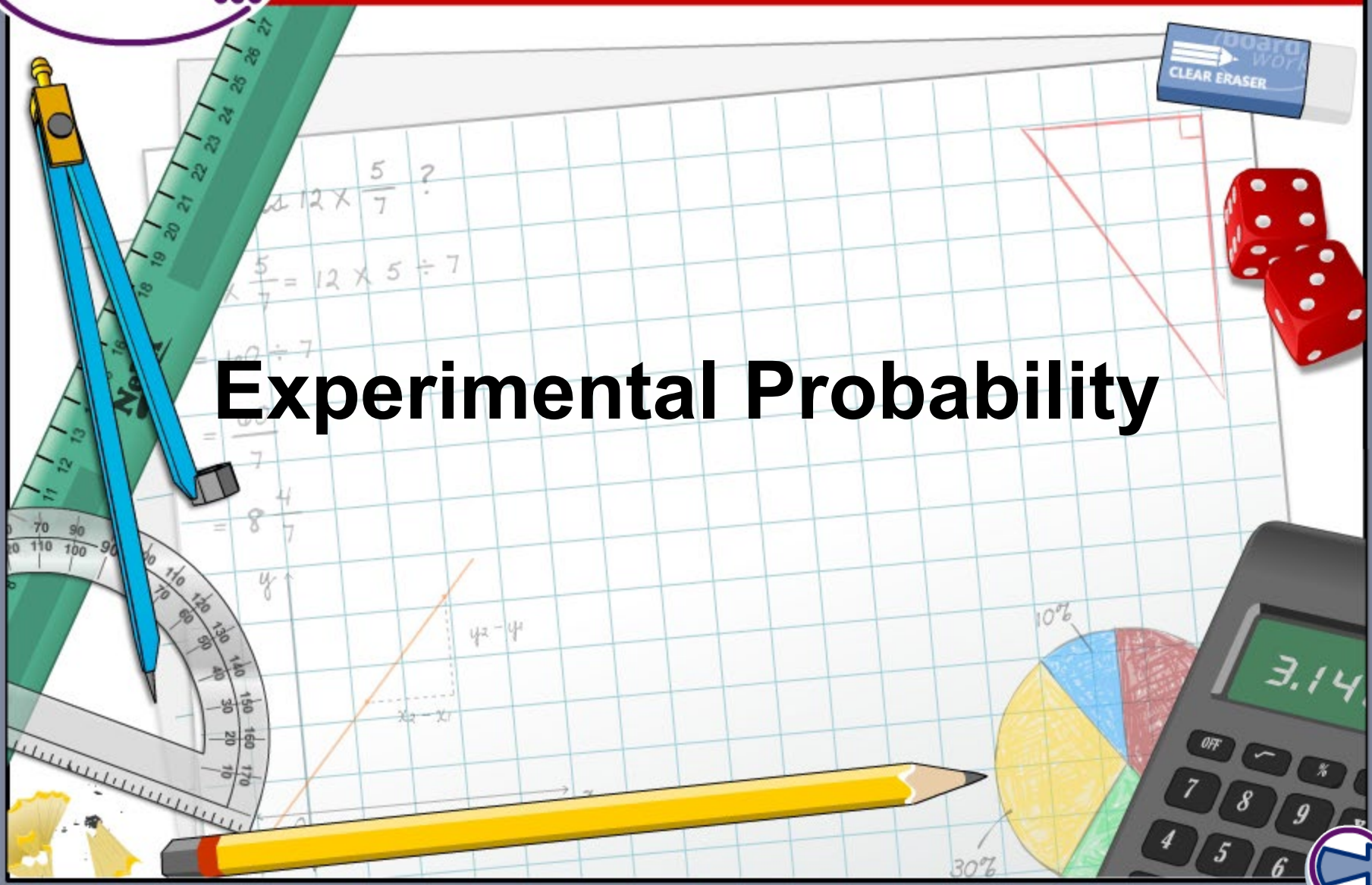


Experimental Probability

Information

Common core icons

This icon indicates a slide where the Standards for Mathematical Practice are being developed. Details of these are given in the Notes field.

Slides containing examples of mathematical modeling are marked with this stamp.

This icon indicates an opportunity for discussion or group work.

The **Standards for Mathematical Practice** outlined in the Common Core State Standards for Mathematics describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

These are:

1) Make sense of problems and persevere in solving them.

2) Reason abstractly and quantitatively.

3) Construct viable arguments and critique the reasoning of others.

4) Model with mathematics.

5) Use appropriate tools strategically.

6) Attend to precision.

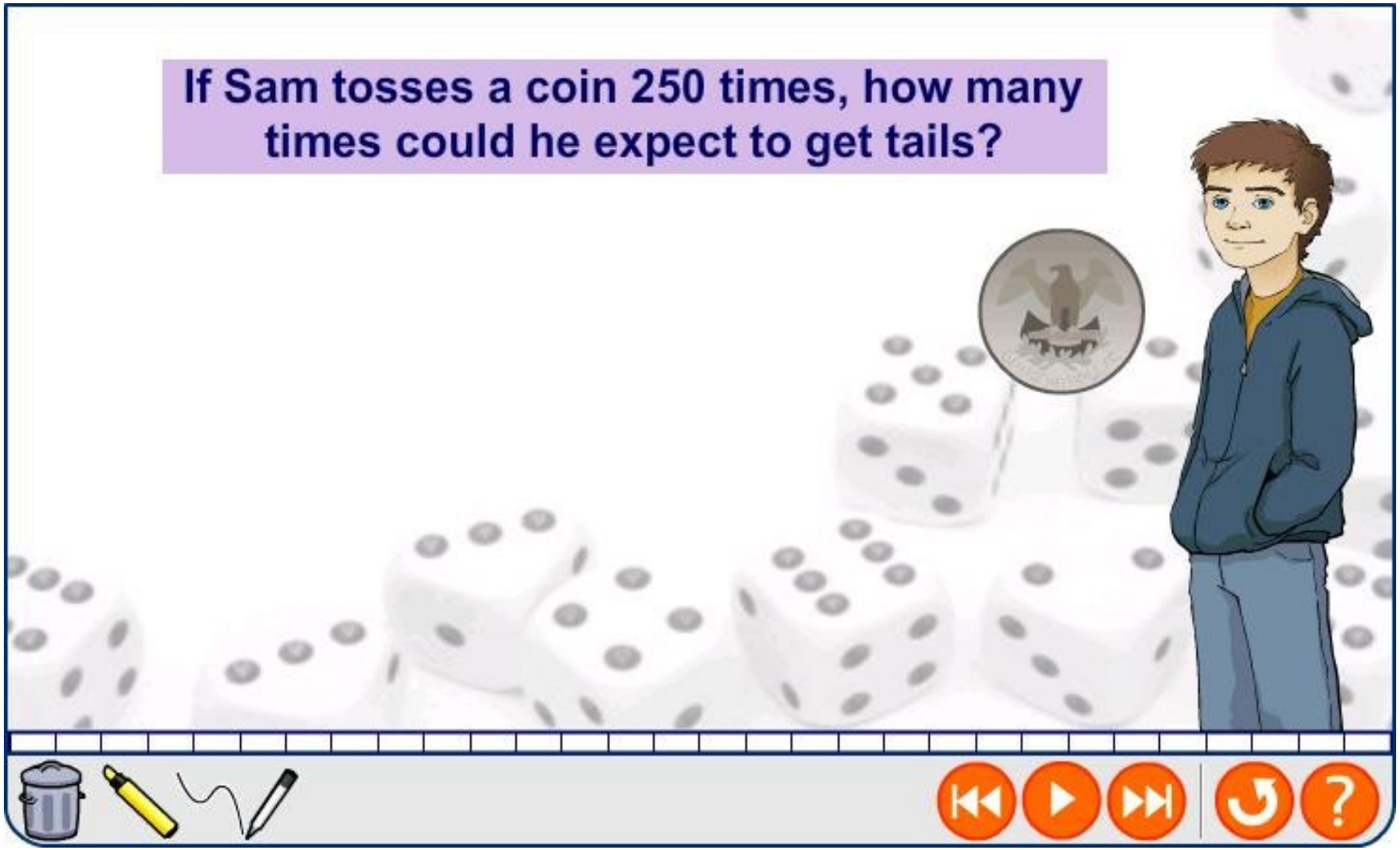
7) Look for and make use of structure.

8) Look for and express regularity in repeated reasoning.

This icon indicates that the slide contains activities created in Flash. These activities are not editable.

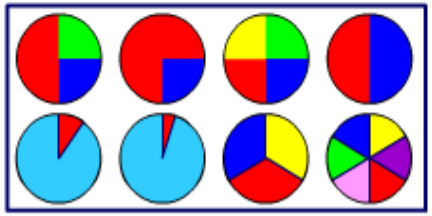
This icon indicates teacher's notes in the Notes field.

Expected frequency



Spinners experiment

Choose a top from the box and press to spin it.



Relative frequency

Aisha rolled her die 200 times and recorded the results below. She does not believe the die is fair. Is she correct? Why or why not?

Number	Frequency	Relative frequency
1	31	$^{31}/_{200} = 0.155$
2	27	$^{27}/_{200} = 0.135$
3	38	$^{38}/_{200} = 0.190$
4	30	$^{30}/_{200} = 0.150$
5	42	$^{42}/_{200} = 0.210$
6	32	$^{32}/_{200} = 0.160$

Relative frequency

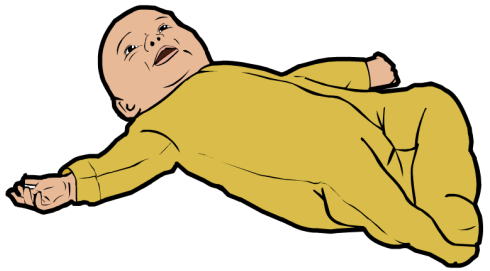
What is the probability of a person chosen at random being left-handed?

Relative frequency

Of the 4,130,665 babies born in the United States in 2009, 527,020 were born in California. Based on this data, what is the probability that the next baby born in the U.S. will be born in California?

Although there are 50 states, more babies are born in some than in others, so the probability is not $\frac{1}{50}$. The most accurate way to estimate probability is to find the relative frequency using data from the past.

$$\text{Relative frequency} = \frac{\text{California babies}}{\text{total U.S. babies}} =$$



$$\frac{527{,}020}{4{,}130{,}665} = \mathbf{0.128} \text{ or } \mathbf{12.8\%}$$

Jelly beans

1) Carrie suspects that there are fewer red jelly beans than other colors in each bag. If each bag of jelly beans contains eight different colors, what is the theoretical probability of choosing a red candy?

Click the "=" button to show the work step by step.