Adventure Description:

In this adventure, students will think like product designers and use equivalent fractions to figure out what items to include in a new subscription box!

Activity

Step One: Background Information on Product Designers and Equivalent Fractions (5-10 minutes)

- Show Video: Introduction to Equivalent Fractions.
- Remind students that some product designers create subscription boxes. If students need to review what a subscription box is, show Handout: Information about Subscription Boxes.
- As a class, discuss the following reasons why a product designer would use equivalent fractions when creating a subscription box. Examples include:
  - Analyzing results from a survey to figure out how many people are interested in different products (e.g., 3/9 of kids want a container of slime and 1/3 of kids want cool erasers)
  - Determining discounts and sales on products (e.g., if two subscription boxes are one sale, one for 2/3 of the original price and one for 2/4 of the original price, you can use equivalent fractions to determine which is the better deal)
- Show Handout: Equivalent Fractions. As a class, review information about equivalent fractions. Review other techniques your class uses to determine whether fractions are equivalent.

Step Two: Activity Set Up (5 minutes)

- Explain to students that they will design a new subscription box.
- Provide students with Handout: Steps to Design a Subscription Box and read through the handout as a class.
- Teacher note: students can work in pairs or individually.

Step Three: Choose Theme and Products (20+ minutes)

- Have students complete step 1 on their handout. They will choose a theme for their box by looking at survey results and determining which one is the most popular.
- As students are working, discuss the following:
  - How can students compare fractions? (use a least common denominator or least common multiple)
  - Which fractions are equivalent? How do you know?
  - Based on the survey results, which is the most popular theme? Which is the least popular theme?

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- When students are finished with their calculations, they should raise their hand so that you can check to make sure they have chosen the correct subscription box. Use Handout: Answer Key to check student's work. (correct answer is the candy subscription box).
  - Teacher note: if students have not chosen the candy subscription box they should double check their work to find and correct their error.
- Students will then complete step 2 on their handout. They will choose the four most popular products for by looking at the survey results and determining the four that are the most popular.
- As students are working, discuss the following:
  - How can students compare fractions? (use a least common denominator or least common multiple)
  - Which fractions are equivalent? How do you know?
  - Based on the survey results, what are the most popular products? What are the least popular products?
- When students are finished with their calculations, they should write the four most popular products on their handout. Then, they should raise their hand so that you can check to make sure they have chosen the correct products (correct answers are: jelly beans, chocolate bars, taffy, and cotton candy).

Step Four: Design a Subscription Box (15+ minutes)
- Have students complete step 3 on their handout. Students will design what their subscription box will look like!
- If time permits, students can build a prototype of their subscription box using recycled materials and art supplies. They can then build the products to go inside their box.

Step Five: Class Discussion (5 minutes)
- Have a concluding class discussion about how equivalent fractions can be used when creating new products. Discuss techniques that students used to identify whether fractions are equivalent.
- If time permits, have students present their subscription box designs to the class.

Marterials List

Provided online:
- Video: Introduction to Equivalent Fractions
- Handout: Information about Subscription Boxes
- Handout: Equivalent Fractions
- Handout: Steps to Design a Subscription Box
- Handout: Answer Key

Not Provided:
- None

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