**Title: Equivalent Fractions**

**Learning Objectives:** Students will be able to:

* Generate equivalent fractions
* Show a visual representation of equivalent fractions using models.
* Find equivalent fractions with multiplying and dividing.

**Definitions:**

**Fraction:** A part of a whole amount.

**Numerator:** The top number, it shows how many parts of the whole we have.

**Denominator**: The bottom number, it shows how many equal parts the whole is divided into.

**Equivalent:** Having the same value.

**Important Questions**

* What are equivalent fractions?
* How can fraction bars or circles help with finding equivalent fractions?
* How can you identify if two fractions are equivalent?

**Instructions:**

In this activity, the above questions are investigated. Complete this document by filling in data tables and writing complete responses. This investigation has three phases: Exploration, Explanation and Application. Work between this document and the simulation (sim).

**Exploration Phase: (5-10 minutes)**

1. Briefly explore this sim. Click the “Equality Lab” tab.
2. Use the arrows  to choose a number for your numerator and denominator.
3. Explore different combinations and find different equivalent fractions.
4. Use different shapes/tools at the top of the page, there are circles, bars, rectangles and cylinders.



*Questions*

1. What happens to our circles when we select our denominator?

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1. What happens to our cylinders when we select our numerator?

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1. How can you represent different equivalent fractions with your second model and fractions?

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**Explanation Phase: (About 25 minutes)**

***Aim:*** *To generate or identify equivalent fractions using models and numbers.*

On the same tab, “Equality Lab”, use the refresh button  on the bottom right side of the page to clear past fractions.

Below are different combinations of fractions and equivalent fractions. Test models or numbers. Using the information you have, a model/fraction/number line, find an equivalent fraction or model that applies. Refresh after every row finding new fractions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Fraction** | **Model** | **Equivalent Model** | **Equivalent Fraction** | **Equivalent Fraction** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

*Questions*

1. What are different ways we can represent fractions?

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1. How can you identify if two fractions are equivalent?

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**Application Phase**

**(15 minutes)**

Click the “Game” tab. ***Click the timer button.*** Complete each level and record your time and score results below.

|  |  |  |
| --- | --- | --- |
| **Level** | **Score** | **Time** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |

If you have time, try to beat your last score or receive 3 stars on each level.

Word Problem

Alexander ordered 2 pizzas with his brother Malcolm from the Sopranos pizza shop. Alexander said he would eat ¼ of the pepperoni pizza and ½ of the cheese pizza. Malcolm said he would heat 2/8 of the cheese pizza and 3/6 of the peperoni pizza. Alexander told Malcolm that he would be having more pizza than him. Malcolm said no, they were having the same amount. Who was right? Use a diagram and numbers to explain below.

Test your answer using the simulation in the Equality lab. Place a screenshot below of how you represented it.

Use the words below to define Equivalent Fractions.

Denominators Fractions Value

Multiplying Numerators Dividing

In math, **Equivalent Fractions** can be defined as **\_\_\_\_\_\_\_\_\_\_\_** with different \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_that represent the same \_\_\_\_\_\_\_\_\_\_\_ or proportion of the whole. You can make equivalent fractions by \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_**both top and bottom** by the same amount.