Fraction Tiles Activity Worksheet

In this activity you will be using fraction tiles to explore relationships among fractions.

At the end of the activity your group will write a report. You may want to read the description on the last page before you begin. Feel free to take pictures to upload into your report.

1. Write the fraction that each tile represents, if 1 (one) is represented by the yellow tile.

Yellow	Red	Blue	Green	Purple	Brown

2. How many red tiles make up one yellow tile?

3. How many purple tiles make up one yellow tile?

4. How many blue tiles make up a yellow tile?

5. How many brown tiles make up one yellow tile?

6. How many green tiles make up a yellow tile?

7. How many purple tiles make up one red tile?

8. How many green tiles make up a red tile?

9. How many purple tiles make up one brown tile?

10. How many green tiles make up a blue tile?

11. How many purple tiles make up one blue tile?

12. Can we combine blue tiles to get a red tile? How, or why not?

13. Can we combine red tiles with blue tiles to get a yellow tile? How, or why not?

14. Can we combine brown tiles to get a blue tile? How, or why not?

15. Describe 5 different ways of combining at least 2 of the following colors to make a yellow tile: red, blue, purple, brown or green tiles. Write each combination as an addition problem.

16. What do we have left when we take away a blue tile from a red tile? Write this as a subtraction problem.

17. Describe 3 other combinations of taking tiles away and then write each as a subtraction problem.

18. List all fraction tiles smaller than $\frac{1}{2}$.

13. List 3 groupings of fraction tiles between $\frac{1}{2}$ and 1.

19. Draw $1\frac{1}{2}$ in two ways.

a) Draw $1\frac{1}{2}$ using only one color of tiles.

b) Draw $1\frac{1}{2}$ using another color of tiles.

20. Draw $1\frac{2}{3}$ in two ways.

a) . Draw $1\frac{2}{3}$ using only one color of tiles

b) Draw $1\frac{2}{3}$ using another color of tiles.

Add using the fraction tiles **<u>only</u>**.
- (a) Select the tiles described
- (b) *Change* all of the tiles into ONE color of tiles
- (c) *Combine* tiles as directed in the problem
- (d) *Write* what you did with the tiles as a math equation. Use the space provided to *draw pictures* of the different combinations
- (e) Change your answer to a single color tile, and write what the result as a fraction.

21. 1 red & 1 blue create?

22. 2 blues & 1 green create?

23. 1 yellow, 1 red, & 1 green create?

24. 5 greens & 1 green create?

25. 3 browns & 5 purples create?

26. 2 blues, 1 brown & 1 green create?

Subtract using the fraction tiles **only**.
- (a) Select the tiles described
- (b) **Change** all of the tiles into ONE color of tiles
- (c) **Take away** tiles as directed in the problem
- (d) **Write** what you did with the tiles as a math equation. Use the space provided to **draw pictures** of the different combinations
- (e) Change to a single color tile, and write what the result as a fraction.

27. 1 red take away 1 blue creates?

28. Start with 1 yellow and 2 blues then take away 1 green and this creates?

29. 1 red take away 2 greens creates?

30. 5 greens take away 1 green creates?

31. 2 blues take away 1 brown creates?

32. Start with 1 red and 1 brown then take away 1 green and this creates?

Your report should include the following:

1. **Introduction:** Explain the purpose of this activity.

2. **Describe** the FRACTION TILES procedure for each of the following, including any challenges you may have had.

    a) Combining fraction tiles to make new fraction tiles.

    b) Creating equal fractions with different fraction tiles.

    c) Adding using fraction tiles.

    d) Subtracting using fraction tiles.

    e) Reducing fractions using fraction tiles. Specifically look at problems #8 and 10 on the activity sheet.

3. **Analysis:** Attach the completed the Fraction Tiles Activity Worksheet.

4. **Prediction:** Choose a different tile to represent the "whole".
    a) How would that change the way you use the tiles for the activity?
    b) What would each of the tiles represent with your new "whole"?
    c) Create an example of an addition problem with your new "whole". Write a mathematical equation and draw the addition.

5. Include **pictures** of how you worked through the activity. Specifically, include pictures of what you are to **Describe** in question #2 of your report above, parts (a) – (e).

6. **Conclusions:** Explain in a few sentences what math you learned here, what particular concepts and problem solving strategies helped you as you discovered how to transition from simplifying and solving fractions problems "traditionally", with rules, to using only the tiles. How can you connect your experience during this activity to anything outside the classroom?