# Name

#### Grade 4 Math Extension Menu

 **Comparing Fractions**

**Standards:** Knowledge of Probability, Knowledge of Number Relationships and Computation, Processes of Mathematics

**Concept:** Fractions

* **Choose** a task from one box to complete.
* If you **choose** the box, “Write your idea here,” see the teacher with your idea.

### **Circle** the number of the box you choose.

* **Submit** this paper to your teacher with your completed work.

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| --- | --- | --- |
| **1.****Complete** *Fraction Number Line* sheets A, B, C and D to show your knowledge of ordering fractions.*Challenge:* **Draw** a number line and **place** both the proper fractions from sheet A and the mixed numbers and improper fractions from sheet C in order on the number line. | **2.**Use your knowledge of equivalent fractions to **complete** the *Freaky Fraction Puzzle.**Challenge:***Create** a *Freaky Fraction Puzzle* of your own to be shared with the other students in the classroom. | **3.****Solve** the problems, “Trees in the Town” and “Students in Line” on the *Fraction Problem Solving* pages provided. *Challenge:***Plan** a different way to **solve** one of the above problems. **Show** your solution to a friend. |
| **4.****Classify** and **arrange** fractions on the two *Comparing Fractions* sheets provided*.**Challenge:***Invent** and **design** a card game that uses your knowledge of comparing fractions.  | **5.****Write** your idea here.**Apply** what you know about fractions to **create** a mathematical problem. | **6.** **Solve** the problems provided on the *Yummy Candy Fractions* sheetby using your knowledge of probability and fractions **Try** answering the *Food for Thought* too!*Challenge:***Write** your own probability problem using what you know about fractions. |

##### Teacher Resource Page

Grade 4 Mathematics Extension Menu

**Standards:**  Knowledge of Probability

Knowledge of Number Relationships and Computation

Processes of Mathematics

**Concepts:** Fractions

**Intended Purpose:** *Ongoing*activity tiered by *readiness,* for all students

**Standard(s) and Indicators Addressed for 4th Grade:**

**Standard 5.0:** Knowledge of Probability:

Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.

**Standard 6.0:** Knowledge of Number Relationships and Computation: Students will describe, represent, or apply numbers or their relationships and will estimate and compute using mental strategies, paper/pencil or technology.

**Standard 7.0:** Processes of Mathematics:

Students will demonstrate the processes of mathematics by making connections and applying reasoning to solve problems and to communicate their findings.

**Indicators:**

* *Box 1* addresses

Grade 4: 400.60.11: Compare and order fractions

and mixed numbers in a variety of forms using models and number lines

* *Box 2* addresses

Grade 4: 400.60.16: Identify and determine equivalent forms of proper fractions and decimals (tenths and hundredths)

* *Box 3* addresses

Grade 4: 400.60.10: Read, write, or represent proper fractions (through tenths) of a set or region (area) using symbols, words or models

* Box 4 addresses

Grade 4: 400.60.11: Compare and order fractions or mixed numbers in a variety of forms using models and number lines

* Box 6 addresses

Grade 4: 400.50.10:Use a fraction to express the probability of a single event with equally likely outcomes (e.g. a spinner with 4 equal sections labeled A, A, B, C: A has a probability of  or .

***Notes to the teacher*:**

* **Students need a solid mastery of the indicators stated above before introducing the *Comparing Fraction*s *Extension Menu*.**
* It is helpful to use the “Vocabulary for Developing Tiered Questions and Tiered Assignments” chart based on Bloom’s Taxonomy to help you formulate additional activities for the *Extension Menu*. The **bolded** words in the extension menu are from Bloom’s Taxonomy. Try to use all levels of the taxonomy as well as taking into consideration students’ learning styles, interests and readiness.

**Organizational Tips for Teachers**

**Box 1:** Provide scissors for students to cut out the fractions and additional paper for the

*Challenge*.

**Box 2:** Provide scissors for students to cut out the fractions and additional paper for the

*Challenge*.

**Box 4:** Provide scissors for students to cut out the fractions. Children may find that the

fraction cards can be classified in more than one way. For example ¾ could be close

to 1 but could also be close to ½. Instruct students to **justify** their reasoning for

placement. Provide additional paper for the *Challenge*.

**Box 5:** Provide materials as needed by the student.

**Box 6:** Provide additional paper if students choose to complete the *Extra*

*Challenge.*

## Fraction Number Line A

##  Proper Fractions

Directions:

1. Cut out the fraction cards below.
2. Arrange the fraction cards in correct order on your desk.
3. Write the fractions in correct order on Fraction Number Line B.
4. Explain in writing why you placed **** where you did on the number line.
5. Compare your number line with another student.

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**Fraction Number Line B**

**Fraction Number Line C**

Mixed Numbers and Improper Fractions

Directions:

1. Cut out the fraction cards below.
2. Arrange the fraction cards in correct order on your desk.
3. Write the fractions in correct order on Fraction Number Line D.

1. Explain in writing why you placed 1  where you did on the number line.
2. Compare your number line with another student.

|  |  |
| --- | --- |
| **9****8** | 1**6****8** |
| **3****6**1 | **8****4** |

###### Fraction Number Line D

**Freaky Fraction Puzzle**

**Examine** the puzzle to understand why A is ⅛ of the **whole** square. Decide what fractional part of the **whole** square each other letter represents. Write the fractional part next to each letter on the puzzle.

**A**

**B**

**H**

**D**

**C**

**F**

# **G**

 **E**

**Fraction Problem Solving**

*Trees in the Town*



The class is doing a survey to see how many of each different type of tree is in the town park. There are a total of 80 trees in the park. The class counts 32 elm trees in the park. There are ¾ as many oaks as elms. There are some birches. There are ½ as many maples as birches. How many of each kind of tree is there in the town park? Show your work below.

Explain your thinking to a friend.

**Fraction Problem Solving**

*Students in Line*

Twenty-four students are in line to go to the movies. ½ of the students have brown hair. ¼ of the students have blonde hair**. ⅛** of the students have red hair. The rest of the students have black hair. How many students have each of the different hair colors? Show your work below.

Explain your thinking to a friend.

**Comparing Fractions**

Directions:

1. Cut out the fraction cards below.
2. Classify each fraction as closest to 0, ½ or 1.
3. Arrange the fractions on the page provided to show which ones are closest to 0, ½ or 1.

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**Comparing Fractions**

**Closest to 0**

**Closest to ½**

**Closest to 1**

**Yummy Candy Fractions!**

Carol and Ellen bought a one-pound box of chocolates for their mother for her birthday. The box contained 5 chocolate covered cherries, 8 caramels, 6 nut clusters, and 1 chocolate covered strawberry.

Use a fraction to express your answer to *each* question below:

1. What is the probability of selecting a caramel, Ellen’s favorite, out of the box?
2. What is the probability of selecting a nut cluster? (Ellen doesn’t like nuts.)
3. What is the probability of selecting a chocolate covered pretzel?
4. If Ellen selects a caramel from the box and eats it, what is the probability that her mother will pick a chocolate covered cherry, her favorite?

**Food for Thought:**

If Carol and Ellen had bought a 2-pound box, so that each amount of candy was doubled, what effect would that have on the probability of selecting a chocolate covered strawberry? What effect would that have on selecting a chocolate covered cherry?