**Grade 6 Math
Unit 7: Fractions**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Lesson 1: Representing Improper Fractions**

In this unit, we will be examining three different types of fractions: proper fractions, improper fractions and mixed factions (mixed numbers). First, recall the different parts of a fraction shown in the image below.


SOURCE: <https://image.slidesharecdn.com/kungfumathp4-slide6mixedfractionspdf-130111014234-phpapp02/95/kungfu-math-p4-slide6-mixed-fractionspdf-6-638.jpg?cb=1357868589>

A **proper fraction** is any fraction in which the numerator is smaller than the denominator. Therefore, the number is less than 1. An example is$ \frac{2}{3}$

An **improper fraction** is any fraction in which the numerator is larger than the denominator. Therefore, the number is larger than 1. An example is $\frac{5}{3}$

Another way of representing a fraction that is larger than 1 is a **mixed fraction** (also called a mixed number). A mixed fraction is a combination of a whole number and proper fraction. An example is $ 1\frac{2}{3}$

1) Represent the following proper fractions using the models providing.

A) $\frac{3}{4}$

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| --- | --- | --- | --- |
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B) $\frac{4}{7}$

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| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |

C) $\frac{2}{5}$

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

2) Draw your own models to represent the following proper fractions.

A) $\frac{2}{3}$

B) $\frac{3}{8}$

C) $\frac{5}{6}$

3) Represent the following improper fractions using the models providing.

A) $\frac{5}{2}$

B) $\frac{7}{3}$

C) $\frac{9}{5}$

4) Draw your own models to represent the following improper fractions.

A) $\frac{8}{3}$

B) $\frac{11}{6}$

C) $\frac{12}{4}$

5) A dime ($.10) is $\frac{1}{10}$ of a dollar. Write the following amounts as proper or improper fractions.

|  |  |
| --- | --- |
| A) $.90  |  |
| B) $1.50 |  |
| C) $2.10 |  |
| D) $.60 |  |

6) Write the following representations as improper fractions.

A)



B)


C)



**Lesson 2: Representing Mixed Numbers**

A mixed number is a combination of a whole number and a proper fraction. Mixed numbers are a different way of writing improper fractions. For example, the following image could be represented as either $3\frac{1}{2}$ or$ \frac{7}{2}$.



1) Write the following representations as mixed numbers.

A)

B)

C)

D)

2) Draw your own models to represent the following mixed number.

A) $2\frac{1}{3}$

B) $1\frac{5}{6}$

C) $3\frac{2}{5}$

D) $4\frac{1}{4}$

**Lesson 3: Expressing improper fractions as mixed numbers (and vice versa)**

The diagram below demonstrates how both improper fractions and mixed numbers can be used to express the same fraction. In this case, either $3\frac{2}{5}$ and $\frac{17}{5}$ could be used to express this diagram as a fraction.

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1) Express the following improper fractions as mixed numbers.

|  |  |
| --- | --- |
| A) $\frac{19}{5}$ |  |
| B) $\frac{11}{3}$ |  |
| C) $\frac{21}{4}$ |  |

|  |  |
| --- | --- |
| D) $\frac{13}{5}$ |  |
| E) $\frac{23}{6}$ |  |
| F) $\frac{17}{7}$ |  |

2) Express the following mixed numbers as improper fractions.

|  |  |
| --- | --- |
| A) $4\frac{3}{5}$ |  |
| B) $2\frac{3}{7}$ |  |
| C) $1\frac{1}{8}$ |  |
| D) $2\frac{4}{5}$ |  |
| E) $5\frac{9}{10}$ |  |
| F) $8\frac{2}{3}$ |  |

3) Find the matching improper fractions and mixed numbers in the chart below. Assign the same number to the matching fractions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| $$3\frac{5}{6}$$ | $$\frac{13}{2}$$ | $$3\frac{4}{5}$$ | $$\frac{13}{3}$$ | $$3\frac{3}{5}$$ |
| $$\frac{21}{5}$$ | $$3\frac{1}{6}$$ | $$\frac{19}{6}$$ | $$4\frac{1}{3}$$ | $$\frac{7}{2}$$ |
| $$2\frac{5}{6}$$ | $$3\frac{1}{2}$$ | $$4\frac{1}{5}$$ | $$4\frac{3}{4}$$ | $$\frac{7}{4}$$ |
| $$\frac{19}{4}$$ | $$1\frac{3}{4}$$ | $$6\frac{1}{2}$$ | $$\frac{19}{5}$$ | $$\frac{23}{6}$$ |
| $$\frac{18}{5}$$ | $$3\frac{1}{3}$$ | $$\frac{17}{6}$$ | $$5\frac{2}{3}$$ | $$\frac{17}{3}$$ |

**Lesson 4: Putting fractions on a number line**

Number lines are a helpful tool for comparing numbers, including fractions. Oftentimes, only whole numbers are shown on a number line. In order to determine the scale (ex. ¼, ½, etc.), you need to count the space between each whole number. For example, if there are four spaces between each whole number, the scale is ¼. Be careful to count the spaces, **not** the vertical lines.

In order to put fractions on a number line, you must first ensure that all numbers greater than 1 are represented the same way (as either mixed numbers or improper fractions). The choice is yours.

1) Label the following number lines, then put the fractions on the line.

A) $2\frac{2}{3}$, $1\frac{1}{3}$, $\frac{2}{3}$, $\frac{13}{3}$, $\frac{17}{3}$



B) $\frac{9}{4}$, $\frac{3}{4}$, $3\frac{1}{4}$, $\frac{15}{4}$, $2\frac{3}{4}$



C) $\frac{3}{5}$, $1\frac{2}{5}$, $\frac{13}{5}$, $\frac{9}{5}$, 3$\frac{1}{5}$



2) Place the following fractions on the number line provided.

A) 1$\frac{1}{4}$, $\frac{5}{3}$, $\frac{7}{2}$, $2\frac{1}{2}$, $\frac{15}{4}$, $1\frac{1}{2}$



B) $\frac{7}{3}$, $2\frac{3}{4}$, $3\frac{1}{2}$, $4\frac{1}{3}$, $\frac{11}{3}$, $\frac{9}{2}$



C) 6$\frac{1}{2}$, $\frac{17}{4}$, $4\frac{1}{3}$, $3\frac{1}{3}$, $\frac{31}{5}$, $\frac{7}{2}$



**Lesson 5: Problem-solving with fractions**

1. Homer eats 9 half-donuts. How do you know that he will need between four and five donuts?

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2. Ms. Vaters is ordering a pizza. She tells Ms. Hann that she ordered $\frac{1}{3}$ cheese, $\frac{1}{3}$ pepperoni, $\frac{1}{3} $vegetarian and $\frac{1}{3}$ meat lovers. Is this possible? Explain why or why not using **words** and **numbers**.

|  |
| --- |
|  |

3. Mr. Field is test-driving seven new vehicles. He drives each car $\frac{1}{4}$ of a kilometre. Represent how far he drove in total using **a number line**, and as a **mixed number** and an **improper fraction.**

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4. Oh no! Blake and Julia are in another huge fight! Blake says that the improper fraction $\frac{15}{3}$ is greater than 5. Julia says that $\frac{15}{3}$ is less than 5. Determine who is correct using **words** and **numbers**.

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