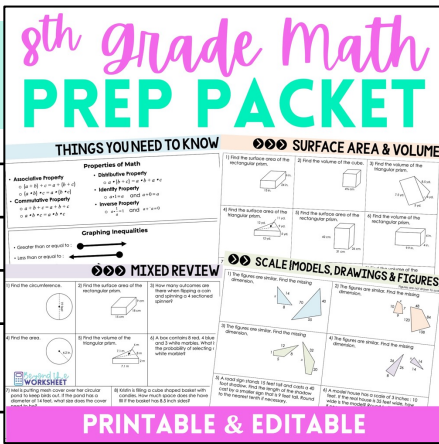


RESOURCE DETAILS



Resource: 8th Grade Math Summer Prep Packet

Suggested Class Time: 15 - 30 minutes per page

The Big Idea

- Students can be given this packet for current grade test prep or as a review of the previous grade level before learning new material.

Contents

Expressions, Equations and Inequalities (pages 5 – 18)

- Properties and the Order of Operations
- Adding and Subtracting Expressions
- Factoring Expressions
- Writing Expressions and Equations
- Solving Equations
- Evaluating Expressions
- Writing and Solving Inequalities

Ratios, Proportions and Percents (pages 19 – 26)

- Proportional Relationships
- Unit Rate
- Percent
- Scale (Models, Drawings and Figures)

Geometry and Statistics (pages 27 – 40)

- Angle Relationships
- Constructing Triangles
- Area/Circumference of Circles
- Surface Area and Volume
- Measures of Center and Variability
- Random Samples & Simple Probability
- Compound Probability

Mixed Review (pages 41 – 45)

Materials Needed

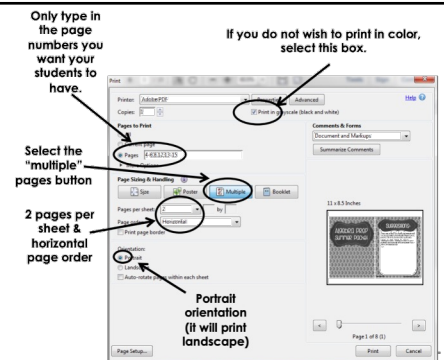
- One copy of each worksheet per student
- Pencils

Suggestions For Use

- Mini quizzes/homework throughout 7th Grade
- End of 7th Grade Test Prep
- Rising 8th Grade Summer Prep
- Beginning of 8th Grade Review of Previous Year's Material

Tips

- You do not need to include all pages when you make a packet for your students. Pick which work best!
- Making booklets: making booklets for your students can be simple and save paper if you follow the directions:
- Print these pages 2 per page to save on copies.



RANDOM & SIMPLE PROBABILITY WRITE & SOLVE INEQUALITIES

1) A teacher wants to find out how his students feel about the last test. He surveys 8 random students from one of his eight classes. Is the sample random? Explain.

2) A cell phone company randomly selects a new sale. Is the sample random? Explain.

3) How many outcomes are there when randomly selecting a letter from the alphabet?

4) How many outcomes are there when flipping a coin?

6) Find the probability of rolling a 4 or smaller on a number cube.

7) Find the probability of landing on an even number on a spinner.

For #9 – 12: There are 8 green, 6 blue and 4 red erasers in a bag. Express each probability as a fraction in simplest form.

9) Find the probability of drawing a green eraser.

10) Find the probability of drawing a blue eraser.

11) Find the probability of drawing a red eraser.

1) Write the inequality represented on the number line.

2) Write the inequality represented on the number line.

3) Write the inequality represented on the number line.

4) Write the inequality represented on the number line.

5) Write as an inequality. "A number is no more than six."

6) Write as an inequality. "The product of four and a number is more than ten."

7) Write as an inequality. "The difference of a number squared and three is at least twelve"

8) Is the given number a solution to the inequality?

9) Is the given number a solution to the inequality?

10) Is the given number a solution to the inequality?

SCALE MODELS, DRAWINGS & FIGURES

1) The figures are similar. Find the missing dimension.

2) The figures are similar. Find the missing dimension.

3) The figures are similar. Find the missing dimension.

4) The figures are similar. Find the missing dimension.

5) A road sign stands 15 feet tall. Find the length of the shadow cast by a smaller sign that is 5 feet tall.

6) A road sign stands 15 feet tall. Find the length of the shadow cast by a smaller sign that is 5 feet tall.

7) A road sign stands 15 feet tall. Find the length of the shadow cast by a smaller sign that is 5 feet tall.

8) A road sign stands 15 feet tall. Find the length of the shadow cast by a smaller sign that is 5 feet tall.

9) The road sign stands 15 feet tall. Find the length of the shadow cast by a smaller sign that is 5 feet tall.

10) The road sign stands 15 feet tall. Find the length of the shadow cast by a smaller sign that is 5 feet tall.

MEASURES OF CENTER AND VARIABILITY

Directions: Find the measures of center and the interquartile range for each set of data.

Average Annual Income

Stem	Leaf
3	1 2
4	3 6
5	1 1 1
6	0 0
7	3 8

Key: 3|1 = 31,000

1) Mean

2) Median

3) Mode

4) Range

5) Interquartile Range

Age at First Job

Age	Frequency
13	3
14	3
15	4
16	2
17	3

6) Mean

7) Median

8) Mode

9) Range

10) Interquartile Range

Pages per Book

Pages	Frequency
7	1
8	2
9	3
10	1

11) Mean

12) Median

13) Mode

14) Range

15) Interquartile Range

Height of Adult Women (in inches)

56, 58, 60, 64, 70, 58, 60, 61, 72, 54, 56, 52, 56, 57

16) Mean

17) Median

18) Mode

19) Range

20) Interquartile Range

ALL
QUESTIONS
EDITABLE

1) Identify the property: $(8 \times 2) \times 0 = 0$

2) Simplify. $-4(3x + 9) - 5x$

4) Identify the property: "The order in which two or more factors are arranged does not affect the product."

5) Simplify. $-(3x + 8) - (4 - 8x)$

7) Write an equivalent expression using the associative property of multiplication.

$5 \cdot (8 \cdot 2) = \underline{\hspace{2cm}}$

10) Simplify. $-6 + 3 - (12 - 10)$

11) Find the perimeter of rectangle.

1) Write the inequality represented on the number line.



2) Is the relationship proportional?

$$\frac{3}{5} = \frac{9.6}{16}$$

3) Find the unit rate.

x	4	6	8	10	12
y	2	3	4	5	6

4) Write the inequality represented on the number line.



5) Is the relationship proportional?

x	1	2	2	4
y	2	4	7	11

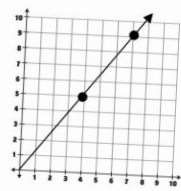
6) Find the unit rate. \$115 earned in 5 hours

7) Write as an inequality. "Four more than half a number is at most sixteen."

8) Find the value of m.

$$\frac{80}{100} = \frac{68}{m}$$

9) Find the unit rate.



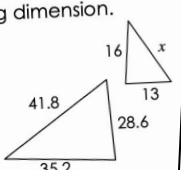
10) Is the given number a solution to the inequality?

11) The ratio of books to magazines in an office waiting room is 6:5. If there are 20 books, how many magazines are there?

12) Jordan has a cupcake shop and bakes 20 dozen cupcakes in 6 hours. How many cupcakes does she bake per hour?

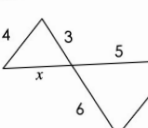
1) What is 42% of 120?

2) The figures are similar. Find the missing dimension.



4) 65.6 is what percent of 82?

5) Find the value of x.

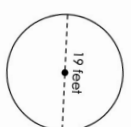


7) Enrollment in a summer camp went from 120 to 150. Find the percent increase.

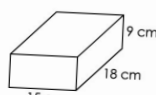
10) A rectangle has a length of 12 cm and a width of 8 cm. Find the perimeter.

13) A \$24 item is discounted 15%. Find the final price after sales tax is added.

1) Find the circumference.

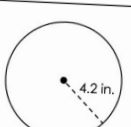


2) Find the surface area of the rectangular prism.

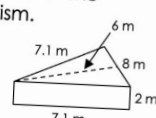


3) How many outcomes are there when flipping a coin and spinning a 4 sectioned spinner?

4) Find the area.



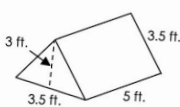
5) Find the volume of the triangular prism.



6) A box contains 8 red, 4 blue and 3 white marbles. What is the probability of selecting a white marble?

8) Kristin is filling a cube shaped basket with candies. How much space does she have to fill if the basket has 8.5 inch sides?

10) Margo is using fabric to make a tent like the one shown below. If she doesn't need fabric for the bottom, calculate how much she will need.



11) Mean

12) Median

13) Measures of center variation for the following ages of art camp participants.

14, 15, 13, 11, 10, 9, 12, 14, 10, 9, 8, 12

5 MIXED
REVIEW
PAGES

THINGS YOU NEED TO KNOW

Integer Operations

Adding

- When the signs are the same, add the integers and keep the same sign.
- When the signs are different, subtract the integers and keep the sign of the integer with the greatest absolute value.

Subtracting

- Keep the first number the same.
- Change the subtraction sign to addition.
- Change the second number to its opposite.
- Follow the rules for addition.

Multiplying and Dividing

- Multiplying or dividing two integers with the SAME sign = positive quotient.
- Multiplying or dividing two integers with DIFFERENT signs = negative quotient.

Converting Between Fractions and Decimals

Fractions to Decimals

- Convert rational numbers to decimals using long division.
- The numerator becomes the dividend.
- The denominator becomes the divisor.

THINGS YOU NEED TO KNOW

Simple Probability

Number of Outcomes

- Identify the total possible number of outcomes for each event.
- Add or multiply the number of outcomes for each event to find the total number of outcomes.

Calculating Probability

- Calculate the total number of outcomes.
- Calculate the number of outcomes for one event.
- Write a fraction with the event outcomes as the numerator and the total number of outcomes as the denominator.
- Express the probability as a simplified fraction, a decimal or a percent.

Making Predictions

- Write the theoretical probability as a fraction in simplest form.
- Multiply the fraction by the number of trials.
- Simplify if necessary.

Compound Probability

- An event that consists of two or more simple events.
- Two events that cannot occur at the same time and place.
- Two or more events that have at least one common outcome.
- Events where the outcome of one event does not have an effect on the outcome of another event.
- Two probabilities to find the compound probability.
- Probabilities + probabilities = compound probability.

THINGS YOU NEED TO KNOW

Properties of Math

Associative Property

- $(a + b) + c = a + (b + c)$
- $(a \cdot b) \cdot c = a \cdot (b \cdot c)$

Commutative Property

- $a + b + c = a + b + c$
- $a \cdot b \cdot c = a \cdot b \cdot c$

Distributive Property

- $a \cdot (b + c) = a \cdot b + a \cdot c$

Identity Property

- $a \cdot 1 = a$ and $a + 0 = a$

Inverse Property

- $a \cdot \frac{1}{a} = 1$ and $a + (-a) = 0$

Graphing Inequalities

- Greater than or equal to : 
- Less than or equal to : 
- Greater than : 
- Less than : 

Angle Relationships

- **Adjacent Angles:** Angles that share a side.
- **Complementary Angles:** Angles that have a sum of 90° .
- **Supplementary Angles:** Angles that have a sum of 180° .
- **Vertical Angles:** Angles that share a vertex, but not a side.
- **Parallel Lines:** Two lines in a plane that never cross.
- **Perpendicular Lines:** Two lines in a plane that form a 90° angle at their intersection.

Formulas

NEED TO
KNOW PAGES

TEACHER FEEDBACK

★★★★★ Extremely satisfied

I am using this activity as NTI preparation and I love it! Students can easily pick up at any lesson and review, while being easy to reference to. I also love the review preparation at the beginning. Great resource!

★★★★★ Extremely satisfied

Excellent resource! We're using this to review and prepare for standardized testing. I just received the following in an email from a parent, "I also really like that math prep packet they are currently working on, is this something he can keep at the end of the year??"

Here's another email from a mom regarding angle relationships, "Ahhhh, thx. I was so proud. Her understanding was so easy to achieve because of the lessons you all have been doing." This prompted me to leave this review right now. I'm so happy. I am using the 7th grade prep with my 6th graders right now as well.

★★★★★ Extremely satisfied

Used this as a resource for reviewing previously taught skills as well as a resource for students who were struggling with skills. The material is well put together! Love your resources!

★★★★★ Extremely satisfied

This resource is extremely thorough. I used it for review work while tutoring a student who had just completed 7th grade. I cut up all of the different problems and pulled one from each page for us to work on each week. It gave us a well-rounded review and he enjoyed solving the problems on a whiteboard. There were two topics he hadn't covered in his 7th-grade instruction, but it was easy to remove those pages and the rest of the resource was still really helpful. The summary pages are also incredibly helpful. Highly recommend.

Follow the journey and connect!



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