

Name \_\_\_\_\_

Teacher \_\_\_\_\_



**Science 5th Grade  
Week 1**

**RC 1 STAAR Prep Packet**

**Focus: Matter and Energy**

**Directions:**

Monday-Wednesday- Complete STAAR Prep questions 1-12

Thursday- Read 5.5A Science Reading Passage, answer questions that follow and complete writing prompt.

Friday- Complete 5.5A, 5.5B and 5.5C TEKS Based Assessment

## Reporting Category 1: 5th Grade Science Readiness Standards

Name \_\_\_\_\_

Date \_\_\_\_\_

Class/Grade \_\_\_\_\_

### 1 Expectation: 5.5(A)

Which material best insulates against heat loss?

- A Rubber
- B Iron
- C Copper
- D Nickel

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### 2 Expectation: 5.5(A)

Four pans each contain one gram of either ice, brass, salt, or sand. Which of these materials has the greatest density?

- F Salt
- G Ice
- H Brass
- J Sand

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### 3 Expectation: 5.5(A)

Diamonds are an extremely hard form of carbon. They take the physical state of a —

- A solid.
- B mixture of a liquid and a gas.
- C gas.
- D liquid.

## Reporting Category 1: 5th Grade Science Readiness Standards

### 4 Expectation: 5.5(A)

Which substance is most likely to dissolve in water?

- F Sand
- G Salt
- H Iron
- J Wood

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### 5 Expectation: 5.5(A)

Genavie is collecting various equipment to be used for her science fair project. Which item should she choose to demonstrate the conductivity of thermal energy and why?

- A Aluminum pie pan, because heat travels through it easily
- B Wool sweater, because it keeps people warm and so must be a great conductor
- C Plastic knife, because plastic can melt
- D Wooden log, because it can be used to start a fire

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### 6 Expectation: 5.5(A)

Which substance would **NOT** float?

- F Wood
- G Plastic
- H Sugar
- J Oil

## Reporting Category 1: 5th Grade Science Readiness Standards

### 7 Expectation: 5.5(A)

Which material is most likely to sink first?

- A Wood
  - B Silk
  - C Glass
  - D Steel
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### 8 Expectation: 5.5(A)

Julie was playing in her swimming pool and noticed that some of her pool toys floated while others sank. It is most likely that —

- F the toys that sank had a higher density than the water, and the toys that floated had a lower density than the water.
  - G the toys that sank had a greater mass than the water, and the toys that floated had a lower mass than the water.
  - H the toys that sank had a lower density than the water, and the toys that floated had a higher density than the water.
  - J the toys that sank had a lower mass than the water, and the toys that floated had a greater mass than the water.
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### 9 Expectation: 5.5(A)

David made hot tea. He wants to put the tea in a cup that will not burn his hands. David should **NOT** put his tea in a cup made of —

- A ceramic.
- B aluminum.
- C wood.
- D styrofoam.

## Reporting Category 1: 5th Grade Science Readiness Standards

### 10 Expectation: 5.5(A)

Which material does **NOT** conduct electrical energy well?

- F Glass
- G Tin
- H Lead
- J Silver

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### 11 Expectation: 5.5(A)

Which of the following is most likely to attract a magnet?

- A A ball of aluminum foil
- B A pool of salt water
- C A clay cup
- D A rubber eraser

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### 12 Expectation: 5.5(A)

Which material does **NOT** dissolve in water?

- F Glue
- G Salt
- H Oil
- J Sugar



Name \_\_\_\_\_

Teacher \_\_\_\_\_



5.5A Science Reading Passage, questions and writing prompt.



# Matter and Energy

## Classifying Matter



### Mass, Volume, and Density

1 Everything around you is matter. The ground, your desk, your paper, and pencil are matter. The water in your glass and the air you breathe are matter. You are matter too. Matter can exist in different forms, or phases. Matter can be a solid, liquid, or gas. Different kinds of matter are used for different purposes. Metals are good for cars and airplanes because they are strong. The oxygen in the air keeps us alive. Plastics are great for dishes because they are light and don't break easily. The material chosen for a particular purpose depends on the properties of that matter. Physical properties of matter are things like color, size, shape, or state of matter. Sometimes we use tools to determine properties.

2 One of the properties we measure with tools is mass. Sometimes we think weight and mass are the same, but they are different. Weight measures the pull of gravity on an object. There is less gravity on the moon. That is why you weigh less on the moon than you do on Earth. Mass and weight are related though. The more mass something has, the more it will weigh. We measure mass by putting an object on a balance. A balance is like a see-saw. An object of unknown mass is put on one side of the balance. Special weights of known mass are put on the other side. Gravity pulls on both sides equally. Gravity doesn't affect the mass measurement. Mass is used for classifying matter. Farmers measure different masses of vegetables for packaging. Medicine portions are based on mass.

3 Another common measurement is volume. Volume tells us how much space an object takes up. When a solid is a regular form, like a cube or cylinder, we can measure the sides. Then we use the lengths to calculate volume. For liquids, we pour them into a measuring tool like a graduated cylinder or measuring cup. Gases fill their container, so gas volume is the same as the container holding it. Volume is useful for measuring ingredients for a cake or the amount of gas we put in our car.



# Matter and Energy

## Classifying Matter



- 4 Mass and volume are useful for classifying matter. Together they can tell us another important property, density. Maybe you have picked up a small rock. Maybe you thought it felt pretty heavy. If you measured the rock's mass it might weigh very little. The rock was not heavy. It just felt heavy for its size. The rock has a high density. Density compares the mass of an object to the object's volume. Relative density compares an object's density to the density of water. An easy way to tell relative density is to put an object in water. If it sinks, the density is greater than water. If it floats, the density is less than water. Density differences cause warm, less dense air to rise and cooler, less dense air to sink in weather systems. Salty water is denser than fresh water, so it sinks making currents in the ocean.
- 5 Mass tells the amount of matter in an object. Volume tells how much space an object takes up. Density compares equal volumes of different materials. These properties clue humans in to practical uses for different materials. Whether taking materials from nature or inventing new materials, humans can use matter to solve problems and make life easier!



# Matter and Energy

## Classifying Matter



1 What is the meaning of currents in paragraph 4?

- A Solubility of salt
- B Movement of water
- C White caps
- D Hurricanes

2 The author's primary purpose for writing the selection is to —

- F explain several properties of matter useful to humans
- G share information about see-saws and gravity's effect on them
- H tell about the ways that mass can be measured
- J describe how ocean currents are affected by density

3 Read this quote from paragraph 5.

*These properties clue humans in to practical uses for different materials.*

Which detail from the article supports this idea?

- A *Physical properties of matter are things like color, size, shape, or state of matter.*
- B *An object of unknown mass is put on one side of the balance.*
- C *Salty water is denser than fresh water, so it sinks making currents in the ocean.*
- D *Farmers measure different masses of vegetables for packaging.*



# Matter and Energy

## Classifying Matter



- 4 Based on the ideas presented in the selection, what can the reader conclude about matter?
- F Metals are the most valuable form of matter.
  - G Matter is something that can be used in everyday life.
  - H For most people, matter is a difficult concept to understand.
  - J Matter is used mainly by adults for everyday tasks.
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- 5 Which sentence from the selection suggests that understanding matter is important to using it correctly?
- A *The oxygen in the air keeps us alive.*
  - B *For liquids, we pour them into a measuring tool like a graduated cylinder or measuring cup.*
  - C *The material chosen for a particular purpose depends on the properties of that matter.*
  - D *Whether taking materials from nature or inventing new materials, humans can use matter to solve problems and make life easier!*



# Matter and Energy

## Classifying Matter



TEKS 5.5A

*Describe as many physical properties of an object in your house as you can.*

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*Can an object or substance have more than one type of physical property? Explain why or why not.*

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## **5.5A, 5.5B & 5.5C TEKS Based Assessment**

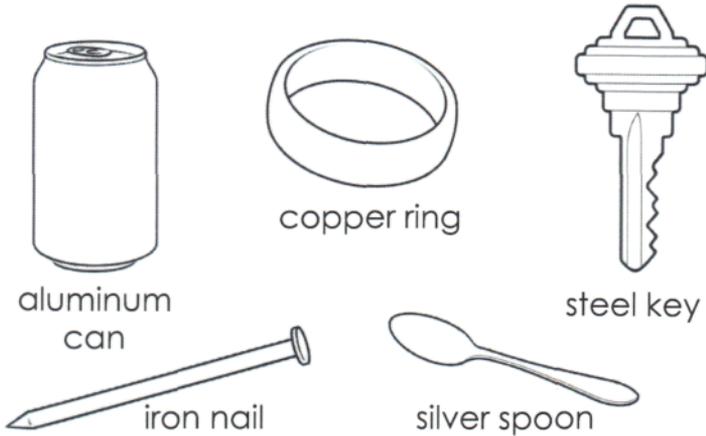
Name \_\_\_\_\_

Date \_\_\_\_\_



5.5A classify matter based on physical properties, including mass, magnetism, physical state, relative density, solubility in water, and the ability to conduct or insulate thermal energy or electric energy

1. What property of matter can be used to classify the following objects into more than one group?



2. A team of science students tested properties of four different materials and recorded their results below.

Material	Is it flexible?	Does it conduct electricity?	Does it conduct heat?
A	no	yes	yes
B	yes	no	no
C	yes	yes	yes
D	no	no	no

Based on the data, which material would best insulate electrical wires?

3. A student needs to remove a metal spoon from a pan of boiling water. What should she do?

- A** Metal is a thermal insulator, so she should use protective gloves to remove the spoon.
- B** Metal is a thermal conductor, so she should use protective gloves to remove the spoon.
- C** Metal is a thermal insulator, so she should not use protective gloves to remove the spoon.
- D** Metal is a thermal conductor, so she should not use protective gloves to remove the spoon.

4. A team of science students observed properties of objects and recorded their observations in the table below.

Object	Observations
plastic bead	green, floats in water, non-magnetic
metal block	silver, sinks in water, non-magnetic
rubber eraser	non-magnetic, blue, floats in water
marble	clear, non-magnetic, sinks in water

What property of matter can be used to separate these objects into two different groups?

Name \_\_\_\_\_



5.5 B demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand

1. A lab team made a mixture of iron filings and sand. What property of the iron filings will help students separate the mixture?

2. A student made fruit salad. Unfortunately, her sister doesn't like grapes. What property of all of the fruits makes the mixture easy to separate?



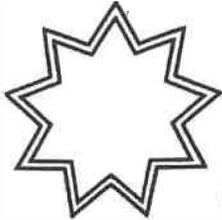
- A** The fruits all float in water.
- B** The fruit are all solids.
- C** The fruits are all soluble in water.
- D** The fruits have equal mass.

3. The Recycling Club needs to separate steel cans and aluminum cans. What property of the steel cans will help them separate the mixture?

4. A teacher made lemonade for a class party. He stirred lemon juice and sugar into water. What property of the sugar remained the same when in the lemonade solution?

- A** texture
- B** taste
- C** color
- D** none of the above

Name \_\_\_\_\_



5.5C-identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water

1. Earth's atmosphere contains nitrogen, carbon dioxide, oxygen, argon, and water vapor. Is the air a mixture or a solution?

2. A science student put grapes and sugar in a bottle of water. She shook the bottle then observed what happened. Which of the materials will form a solution with the water?

3. A lab team followed the following procedures:

1. Stir 50g of salt into 1,000ml of water.
2. Boil the saltwater solution in a pan using a hot plate.
3. Remove heat after all water has evaporated.

How many grams of salt can the lab team expect to find in the pan after Step 3?

4. A 5<sup>th</sup> grader dissolved green powdered drink mix and sugar in water. He decided it was too sweet, so he poured out half of the liquid and added more water. Which property of the mixture changed after adding more water?

- A** the taste
- B** the color
- C** the physical state
- D** both A and B
- E** both B and C