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الملف أوراق عمل ومراجعة الوحدة الأولى Scientist Better a Building مع الحل

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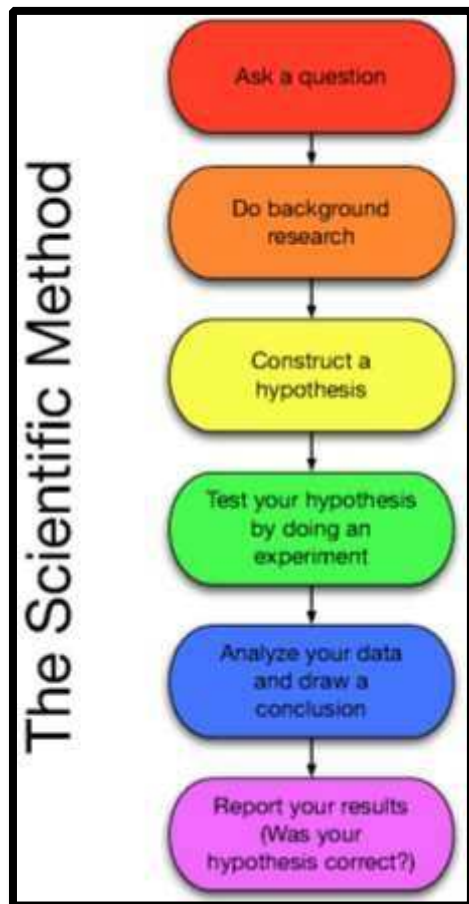
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- LESSON 1 – BECOMING A SCIENTIST Vocabulary:**

<b>Science</b>	Way of learning about natural world
<b>Observation</b>	Using 1 or more of your senses to learn about something
<b>Inference</b>	Conclusion you form from the information you have
<b>Controlled Experiment</b>	An investigation where you change 1 factor and observe the effects.
<b>Model</b>	How you represent an object
<b>Independent Variable</b>	What you change in an experiment
<b>Dependent Variable</b>	What you are measuring in an experiment
<b>Scientific Theory</b>	To explain something that is happening again and again in the natural world
<b>Scientific Law</b>	A rule that explains a pattern happening in the natural world.
<b>Technology</b>	Practical use of science



**Scientific inquiry** starts with an observation.

When you see something in the world you start asking WHY?

Then you research and try to find out the answers.

You collect lots of information and then study your results.

You make a conclusion at the end from all your information.

**Scientific Investigation** is a way to answer some scientific questions.

When you carry out an investigation you want to find out about how different things effect 1 thing. So you carry out an EXPERIMENT.

**Controlled Experiment** is an investigation where you change 1 factor and observe the results.

**Variables** in an investigation are factors that you are changing and searching the cause and effect relationships.

When an experiment is completed by 1 scientist, other scientists will do the same experiment and check the results.

Meetings are held to discuss all the results.

**Technology** has helped humans and science develop and improve.

**Transportation technology** has allowed humans to travel quickly from one place to another.

**Communication technology** allows humans to communicate with others quickly.

Science has many branches. Life science, Earth Science, Physical science, Chemistry.

**Why is it important for scientists to communicate their findings to others?**

It allows other scientists to know their findings and use them to answer other questions.

**What types of things are important for the scientist to communicate?**

The results of the investigation and the how the investigation was carried out, the methods that were used

**What are some ways that scientists communicate with others?**

Publishing their findings in scientific journals, presenting their research at conferences

**What might happen if scientists did not communicate their findings?**

Other scientists would not know about the findings

**How has communication technology affected our lives today?**

It allows for fast communication over long distances.

**What invention allowed images to be sent quickly over distances?**

Television



• **LESSON 2 – THE SCIENTIFIC METHOD**

**Vocabulary:**

<b>Scientific method</b>	Series of steps scientists follow during an investigation
<b>Hypothesis</b>	Possible answer or prediction
<b>Data</b>	Information gathered during an investigation

**How do scientists conduct investigations?**

Scientists conduct investigations following a series of steps called the scientific method.

**What is the scientific method?**

The scientific method is a series of steps that scientists use when investigating.

**What is one thing that is important for all scientists to do when conducting investigations?**

Keep careful records

**Why is using the scientific method important to a scientist’s research?**

Other scientists can repeat the procedures and their results can be checked.

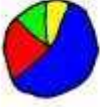
**What are some ways to organize data so that it can be analyzed?**

Data can be organized in a table, graph, diagram, map, model, or a sequence of images **LESSON 3 – TOOLS OF THE SCIENTISTS Vocabulary:**

<b>Quantitative data</b>	This data can be measured using some quantity or amount.
<b>Qualitative data</b>	This data cannot be measured using some quantity, so it is not numeric
<b>Description</b>	A summary of observations
<b>Explanation</b>	an interpretation of why something occurs
<b>Precision</b>	How close repeated measurements are to each other
<b>Consistency</b>	Ability to repeat something with little or no changes
<b>Mean</b>	the number that is halfway between the high and low number of the data set

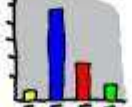
### Graph Types

**PIE GRAPHS**  
What portion of the total does each part make up?




"like pieces of a pie"

**BAR GRAPHS**  
How different are these variables to each other?

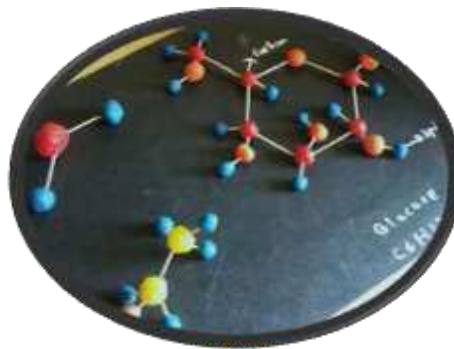


"like stacks of coins"

**LINE GRAPHS**  
How does this one variable change over time?

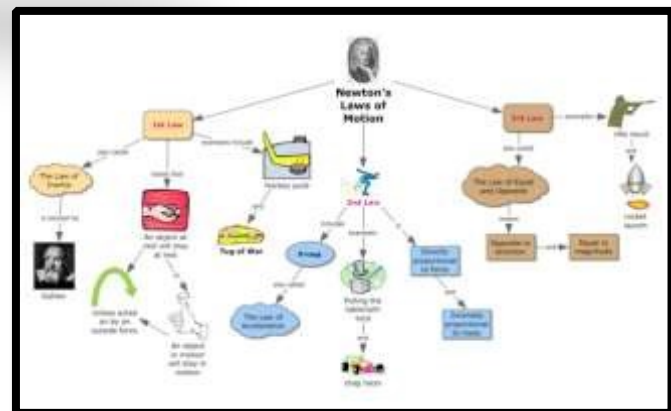


"like turns in a road"



### Types of Graphs

<p><b>3 major types of Graphs:</b></p> <ol style="list-style-type: none"> <li>1. Bar Graph</li> <li>2. Line Graphs</li> <li>3. Circle Graphs</li> </ol>	<p><b>Bar Graphs</b></p> <ol style="list-style-type: none"> <li>1. Categorical data</li> <li>2. Vertical and horizontal bars</li> <li>3. Show amounts of each category</li> </ol>
<p><b>Line Graphs</b></p> <ol style="list-style-type: none"> <li>1. Most common graph</li> <li>2. Shows change over time</li> <li>3. Shows how one variable changes in response to another</li> <li>4. Also known as a line chart</li> </ol>	<p><b>Circle Graphs</b></p> <ol style="list-style-type: none"> <li>1. Categorical data</li> <li>2. Shows relationship of part to the whole</li> <li>3. Must have data for all categories</li> <li>4. Also called a pie chart</li> </ol>



<b>Median</b>	the middle number between the high and the low number
<b>Range</b>	the difference between the highest and the lowest values

**What are some variables you might measure in a scientific investigation?** mass,

height, volume, time, distance, temperature

**How would you organize the data you collect during a scientific investigation?**

The data can be organized in a table.

**What are some things that would be measured using quantitative data?**

height, age, length, weight

**What are some things that would be measured using qualitative data?**

texture, color, smell

**What is the difference between a description and an explanation?**

A description is simply a summary of the observations.

An explanation is an interpretation of why something occurs.

**How could you increase the precision of a measuring tool?**

Make the units on the tool smaller.

**What are some visual ways in which scientists can organize and communicate data?**

tables and graphs

**What is an advantage to organizing data in a graph?**

It easily and quickly gives us a picture of the relationship between the variables involved.

**What role do statistics play in communicating information about data?**

Statistics summarize and help to evaluate the data.

**When is a line graph most appropriate?**

When you want to show the relationship between two variables.

**When is a circle graph most appropriate?**

When you want to show how a complete set of data is divided into parts.

**When is a bar graph most appropriate?**

When you want to show the relationship between several variables.

**How do you find the median of the data set?**

Arrange the numbers from least to greatest and find the middle value. If there are two middle values find the mean of these.

**What are the steps for finding the mean?**

Add all of the numbers together and divide the sum by the number of entries in the data set.

**How do you find the range of the data set?**

Subtract the lowest number from the highest number in the data set.

**mean**  
The mean is the average or norm.  
• Add up all of the values to find a total.  
• Divide the total by the number of values you added together.  
 $2 + 2 + 3 + 3 + 5 + 5 + 7 + 8 = 32$   
There are 7 values.  $32 \div 7 = 4.57$   
Divide the total by 7.

**median**  
The median is the middle value.  
• Put all of the values into order.  
• The median is the middle value.  
• If there are two values in the middle, find the mean of these two.

**mode**  
The mode is the most frequent value.  
• Count how many of each value appears.  
• The mode is the value that appears the most.  
• You can have more than one mode.  
2, 2, 3, 3, 5, 5, 7, 8  
The modes are 2 and 5

**range**  
The range is the difference between the lowest and highest value.  
• Find the highest and lowest values.  
• Subtract the lowest value from the highest.  
2, 2, 3, 3, 5, 5, 7, 8  
Lowest: 2, Highest: 8  
 $8 - 2 = 6$   
The range is 6

**What things can be worn to protect yourself in the lab?**

safety goggles, gloves, apron

**What other things should you do to stay safe in the lab?**

Know where the safety equipment is located; read and follow directions; always wash hands before and after an investigation.

**LESSON 4 – MAKING MEASUREMENTS****What properties of matter can you measure?**

height, weight, temperature

**What tools do you use to measure length, weight and temperature?**

ruler, scale, thermometer

**Why is it important to know how to measure matter?**

Measured amounts can be compared. Sometimes you might need to know how much of something you have.

**Why is it important to know how to observe matter?**

So matter can be compared, to describe objects

**What are some properties you can use to describe objects?**

You can use physical properties size, shape, weight and color.

**How does a hand lens help scientists observe objects?**

It magnifies an image of the object so that scientists can make more detailed descriptions.

**Why are microscopes important in scientific work?**

Scientists can observe and describe the physical properties of very small objects, such as cells

**Which properties can be used to measure a backpack?**

length, width, weight

**Why is it useful to use measurements when describing physical properties?**

to be more precise

**How do we find the measurable properties of an object, such as length or weight?**

We use tools such as rulers and scales.

**How could you measure the distance around a ball?**

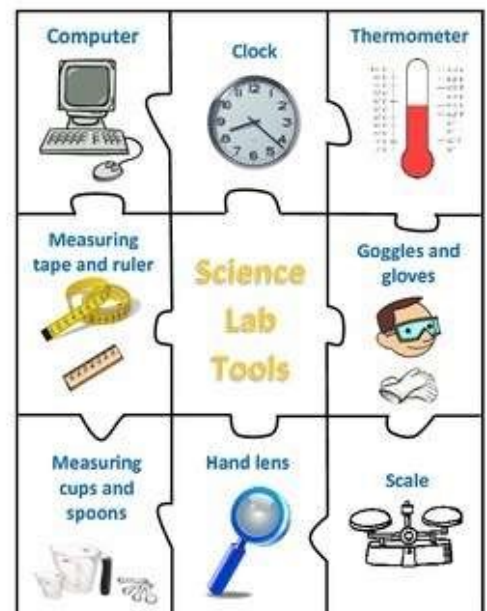
Use a tool that measures length such as a tape measure.

**Which metric unit would you use to measure the thickness of a Dirham?**

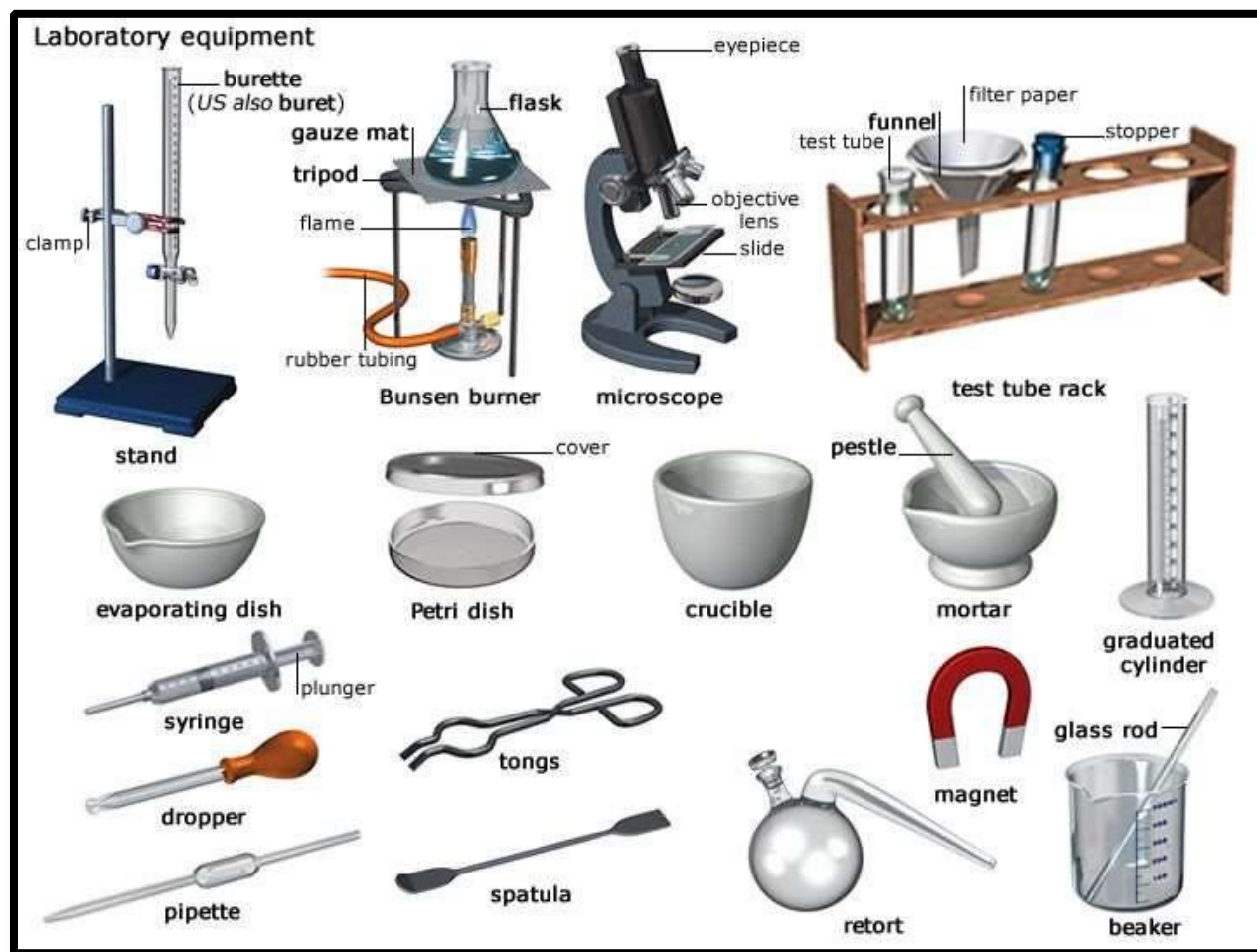
Millimeter

**Which metric unit would you use to measure the length of a guitar?**

Meter







**How is a balance like a scale?**

They both are instruments used for measurement.

**How is a balance different from a scale?**

A balance compares known masses to unknown masses.

**What units do scientists use to measure mass?**

Grams, kilograms

**How many grams in a kilogram?**

1,000

**Suppose you see a temperature written as “35 degrees”. Is this a complete measurement? Why?**

No, the measurement must say what unit the temperature was measured in.

**How is the Kelvin scale different from the Celsius scale?**

It has no negative numbers, and does not use the word degrees.

**At what temperature does water boil in degrees Celsius? and in kelvin? 100**

°C; 373 kelvin



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## United Arab Emirates Ministry of Education Grade: 5

### Chapter 1 Practice Questions

#### 1. Science:

- different types of information that can be collected to answer a scientific question.
- is a way of learning about the natural world.
- is using one or more of your senses to identify or learn about something.
- a series of steps that scientist use when conducting a scientific investigation.

#### 2. Hypothesis:

- the practical use of science.
- a description of how close repeated measurements are to each other.
- is conclusion formed from available information or evidence.
- is a prediction that can be tested in investigation.

#### 3. Earth science:

- a rule that describes a pattern in nature. Ex: gravity force.
- The study of living things. Ex: study plants and animal.
- the study of matter (Chemistry) and energy (Physics).
- the study of earth and space. Ex: study rocks, soils, oceans, clouds, rivers and climate system.

#### 4. Dependent variables:

- the variable that is being measured during an investigation.
- a rule that describes a pattern in nature. Ex: gravity force.
- is an attempt to explain a pattern observed repeatedly in the natural world.
- the variable that is changed in controlled experiment.

#### 5. Observation:

- different types of information that can be collected to answer a scientific question.

- is a way of learning about the natural world.
- is using one or more of your senses to identify or learn about something.
- a series of steps that scientist use when conducting a scientific investigation.

#### **6. Precision:**

- is conclusion formed from available information or evidence.
- a description of how close repeated measurements are to each other.
- the practical use of science.
- is a prediction that can be tested in investigation.

#### **7. Inference:**

- a description of how close repeated measurements are to each other.
- the practical use of science.
- is conclusion formed from available information or evidence.
- is a prediction that can be tested in investigation.

#### **8. Technology:**

- the practical use of science.
- a description of how close repeated measurements are to each other.
- is conclusion formed from available information or evidence.
- is a prediction that can be tested in investigation.

#### **9. Scientific method:**

- different types of information that can be collected to answer a scientific question.
- is a way of learning about the natural world.
- is using one or more of your senses to identify or learn about something.
- a series of steps that scientist use when conducting a scientific investigation.

#### **10. Independent variables:**

- the variable that is being measured during an investigation.
- a rule that describes a pattern in nature. Ex: gravity force.
- is an attempt to explain a pattern observed repeatedly in the natural world.
- the variable that is changed in controlled experiment.

**11. Scientific law:**

- a rule that describes a pattern in nature. Ex: gravity force.
- the variable that is being measured during an investigation.
- is an attempt to explain a pattern observed repeatedly in the natural world.
- the variable that is changed in controlled experiment.

**12. Data:**

- different types of information that can be collected to answer a scientific question.
- is a way of learning about the natural world.
- is using one or more of your senses to identify or learn about something.
- a series of steps that scientist use when conducting a scientific investigation.

**13. Life science:**

- The study of living things. Ex: study plants and animal.
- a rule that describes a pattern in nature. Ex: gravity force.
- the study of matter (Chemistry) and energy (Physics).
- the study of earth and space. Ex: study rocks, soils, oceans, clouds, rivers and climate system.

**14. Scientific theory:**

- the variable that is changed in controlled experiment.
- the variable that is being measured during an investigation.
- a rule that describes a pattern in nature. Ex: gravity force.
- is an attempt to explain a pattern observed repeatedly in the natural world.

**15. Physical science:**

- the study of earth and space. Ex: study rocks, soils, oceans, clouds, rivers and climate system.
- a rule that describes a pattern in nature. Ex: gravity force.
- The study of living things. Ex: study plants and animal.
- the study of matter (Chemistry) and energy (Physics).

**16. Quantitative data:**

o an interpretation of observation. o data that can be measured. Ex: length, width, height, volume, mass and weight. o descriptive data that cannot be measured. Ex: colors, texture, smells and tastes. o a summary of observations.

### 17. Median:

o the sum of the numbers in a data divided by the number of entries in the data set . o the set of data in the difference between the highest and lowest values . o a precise expression of a physical property as length and mass in a specific unit such as centimeters or grams . o the middle number in a set of data when the data are arranged in numerical order.

### 18. Metric balance:

o used to measure an object's mass. o scales hat use spring to measure the object weight. o the amount of space that matter takes up.  $\text{Volume} = \text{length} * \text{width} * \text{height}$ . o the amount of matter in an object.

### 19. Graduated cylinder:

o used to measure an object's mass  
o is used to measure temperature in Fahrenheit scale ( °F) or Celsius scale (° C ) o is a tall, narrow, clear container used for measuring the volume of a liquid in milliliter (ml) or Litters (L). o scales hat use spring to measure the object weight.

### 20. Consistency:

o display information in rows and columns o the ability to repeat a task with little variation. o are used to organize and summarize data in a visual way. Ex: bar graphs, circle graph and maps.  
o how close repeated measurements are to each other.

### 21. Qualitative data:

o a summary of observations. o an interpretation of observation. o descriptive data that cannot be measured. Ex: colors, texture, smells and tastes. o data that can be measured. Ex: length, width, height, volume, mass and weight.

### 22. Volume:

o the amount of matter in an object. o used to measure an object's mass. o scales hat use spring to measure the object weight. o the amount of space that matter takes up.  
Volume= length \* width\* height.

### 23. Tables:

o how close repeated measurements are to each other o the ability to repeat a task with little variation. o are used to organize and summarize data in a visual way. Ex: bar graphs, circle graph and maps. o display information in rows and columns.

### 24. Mean:

o a precise expression of a physical property as length and mass in a specific unit such as centimeters or grams. o the middle number in a set of data when the data are arranged in numerical order. o the sum of the numbers in a data divided by the number of entries in the data set. o the set of data in the difference between the highest and lowest values.

**25. Measurement:** o the set of data in the difference between the highest and lowest values. o a precise expression of a physical property as length and mass in a specific unit such as centimeters or grams. o the sum of the numbers in a data divided by the number of entries in the data set.  
o the middle number in a set of data when the data are arranged in numerical order.

### 26. Description:

o descriptive data that cannot be measured. Ex: colors, texture, smells and tastes. o a summary of observations. o an interpretation of observation. o data that can be measured. Ex: length, width, height, volume, mass and weight.

### 27. Mass:

o scales hat use spring to measure the object weight o the amount of space that matter takes up. Volume= length \* width\* height. o used to measure an object's mass. o the amount of matter in an object.

**28. Graphs:** o the ability to repeat a task with little variation. o are used to organize and summarize data in a visual way. Ex: bar graphs, circle graph and maps. o display information in rows and columns. o how close repeated measurements are to each other.

**29. Spring scales:**

o the amount of space that matter takes up.  $\text{Volume} = \text{length} * \text{width} * \text{height}$ . o the amount of matter in an object. o used to measure an object's mass. o scales hat use spring to measure the object weight.

**30. Thermometer:** o a tall, narrow, clear container used for measuring the volume of a liquid in milliliter (ml) or Litters (L). o scales hat use spring to measure the object weight. o used to measure an object's mass. o used to measure temperature in Fahrenheit scale ( °F) or Celsius scale (° C ).

**31. Explanation:**

o data that can be measured. Ex: length, width, height, volume, mass and weight. o descriptive data that cannot be measured. Ex: colors, texture, smells and tastes. o a summary of observations. o an interpretation of observation.

**32. Range:**

o the middle number in a set of data when the data are arranged in numerical order. o the sum of the numbers in a data divided by the number of entries in the data set. o the set of data in the difference between the highest and lowest values.

o a precise expression of a physical property as length and mass in a specific unit such as centimeters or grams.

**33. Fill in each blank with the best term from the list.**

Quantitative data      Spring scales      Qualitative data      Precision      Hand lens      Consistency

- -----is the ability to repeat a task with little variation
- -----data that can be measured
- -----is how close repeated measurements being to each other
- -----Handheld magnification glass that makes objects look larger.
- -----data that can be measured
- ----- scales hat use spring to measure the object weight

**34. Fill in each blank with the best term from the list.**

Hypothesis      Dependent variables      Scientific method      Hand lens      Consistency

- -----is the ability to repeat a task with little variation

- -----prediction or answering question
- -----Variable that being measured
- -----Series step that scientist use hen conduction an investigation
- -----Handheld magnification glass that makes objects look larger.

**35. Put the steps of the scientific method in correct order.**

Form hypothesis

Observation

Ask question

Test hypothesis

Result

Draw conclusion

- -----
- -----
- -----
- -----
- -----
- -----

**Choose the correct answer**

**36. Which of these words is not example for earth science?**

- Energy
- Rocks
- Soil

**37. -----is the middle number for set of a data**

- Mean
- Median
- Range

**38. Which tool is used to measure weight and what its unit?**

- Spring scale/ g
- Ruler/ cm
- Graduated cylinder/ ml

**39. To see small things clearer we use microscope.**

- True
- False



**40. Precision is how close repeated measurement to each other**

- True
- False

**41. Find the volume of regular shape if you know the length is 5, the width is 10 and the height is 2?****42. Convert.**

- 1 a. 400 cm = \_\_\_\_\_ m 1 b. 3,000 m = \_\_\_\_\_ km  
2 a. 700 cm = \_\_\_\_\_ m 2 b. 7,000 m = \_\_\_\_\_ km 3 a. 4,000 m = \_\_\_\_\_ km  
3 b. 10 m = \_\_\_\_\_ cm  
4 a. 100 cm = \_\_\_\_\_ m 4 b. 500 cm = \_\_\_\_\_ m  
5 a. 3 m = \_\_\_\_\_ cm 5 b. 1,000 m = \_\_\_\_\_ km  
6 a. 8 m = \_\_\_\_\_ cm 6 b. 6 m = \_\_\_\_\_ cm  
7 a. 9,000 m = \_\_\_\_\_ km 7 b. 200 cm = \_\_\_\_\_ m  
8 a. 5 km = \_\_\_\_\_ m 8 b. 6,000 m = \_\_\_\_\_ km  
9 a. 2,000 m = \_\_\_\_\_ km 9 b. 900 cm = \_\_\_\_\_ m  
10 a. 8,000 m = \_\_\_\_\_ km 10 b. 10 km = \_\_\_\_\_ m

United Arab Emirates Ministry of Education

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## Chapter 1 Practice Answers

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- o used to measure an object's mass.
- o scales that use spring to measure the object weight.
- o the amount of space that matter takes up.  $\text{Volume} = \text{length} * \text{width} * \text{height}$ .
- o the amount of matter in an object.

#### 19. Graduated cylinder:

- o used to measure an object's mass

o is used to measure temperature in Fahrenheit scale ( °F) or Celsius scale ( ° C ) o is a tall, narrow, clear container used for measuring the volume of a liquid in milliliter (ml) or Litters (L). o scales hat use spring to measure the object weight.

## 20. Consistency:

o display information in rows and columns o the ability to repeat a task with little variation. o are used to organize and summarize data in a visual way. Ex: bar graphs, circle graph and maps.  
o how close repeated measurements are to each other.

## 21. Qualitative data:

o a summary of observations. o an interpretation of observation. o descriptive data that cannot be measured. Ex: colors, texture, smells and tastes. o data that can be measured. Ex: length, width, height, volume, mass and weight.

22. **Volume:** o the amount of matter in an object. o used to measure an object's mass. o scales that use spring to measure the object weight. o the amount of space that matter takes up.  $\text{Volume} = \text{length} * \text{width} * \text{height}$ .

## 23. Tables:

o how close repeated measurements are to each other o the ability to repeat a task with little variation. o are used to organize and summarize data in a visual way. Ex: bar graphs, circle graph and maps. o display information in rows and columns.

## 24. Mean:

o a precise expression of a physical property as length and mass in a specific unit such as centimeters or grams. o the middle number in a set of data when the data are arranged in numerical order. o the sum of the numbers in a data divided by the number of entries in the data set. o the set of data in the difference between the highest and lowest values.

25. **Measurement:** o the set of data in the difference between the highest and lowest values. o a precise expression of a physical property as length and mass in a specific unit such as centimeters or grams. o the sum of the numbers in a data divided by the number of entries in the data set.  
o the middle number in a set of data when the data are arranged in numerical order.

**26. Description:**

o descriptive data that cannot be measured. Ex: colors, texture, smells and tastes. o a summary of observations. o an interpretation of observation. o data that can be measured. Ex: length, width, height, volume, mass and weight.

**27. Mass:**

o scales that use spring to measure the object weight o the amount of space that matter takes up. Volume= length \* width\* height. o used to measure an object's mass. o the amount of matter in an object.

**28. Graphs:** o the ability to repeat a task with little variation. o are used to organize and

summarize data in a visual way. Ex: bar graphs, circle graph and maps. o display information in rows and columns. o how close repeated measurements are to each other.

**29. Spring scales:**

o the amount of space that matter takes up. Volume= length \* width\* height. o the amount of matter in an object. o used to measure an object's mass. o scales that use spring to measure the object weight.

**30. Thermometer:** o a tall, narrow, clear container used for measuring the volume of a liquid in

milliliter (ml) or Litters (L). o scales hat use spring to measure the object weight. o used to measure an object's mass. o used to measure temperature in Fahrenheit scale ( °F) or Celsius scale (° C).

**31. Explanation:**

o data that can be measured. Ex: length, width, height, volume, mass and weight. o descriptive data that cannot be measured. Ex: colors, texture, smells and tastes. o a summary of observations. o an interpretation of observation.

**32. Range:**

o the middle number in a set of data when the data are arranged in numerical order. o the sum of the numbers in a data divided by the number of entries in the data set. o the set of data in the

**difference between the highest and lowest values.** o a precise expression of a physical property as length and mass in a specific unit such as centimeters or grams.

**33. Fill in each blank with the best term from the list.**

- **Consistency** is the ability to repeat a task with little variation
- **Quantitative data** data that can be measured
- **Precision** is how close repeated measurements being to each other
- **Hand lens** Hand held magnification glass that makes objects look larger.
- **Qualitative data** data that can be measured
- **Spring scales** scales that use spring to measure the object weight

**34. Fill in each blank with the best term from the list.**

- **Consistency** is the ability to repeat a task with little variation
- **Hypothesis** prediction or answering question
- **Dependent variables** Variable that being measured
- **Scientific method** Series step that scientist use hen conduction an investigation
- **Hand lens** Handheld magnification glass that makes objects look larger.

**35. Put the steps of the scientific method in correct order.**

- **Observation**
- **Ask question**
- **Form hypothesis**
- **Test hypothesis**
- **Result**
- **Draw conclusion**

**Choose the correct answer**

**36. Which of these words is not example for earth science?**

- Energy
- Rocks

- Soil

37. -----is the middle number for set of a data

- Mean
- Median
- Range

38. Which tool is used to measure weight and what its unit?

- Spring scale/ N
- Ruler/ cm
- Graduated cylinder/ ml

39. To see small things clearer we use microscope.

- True
- False

40. Precision is how close repeated measurement to each other

- True
- False

41. Find the volume of regular shape if you know the length is 5, the width is 10 and the height is 2? 5

$$\times 10 \times 2 = 100$$

42. Convert.

- 1 a. 400 cm = \_\_\_\_\_ m 1 b. 3,000 m = \_\_\_\_\_ km  
 2 a. 700 cm = \_\_\_\_\_ m 2 b. 7,000 m = \_\_\_\_\_ km 3 a. 4,000 m  
 = \_\_\_\_\_ km 3 b. 10 m = \_\_\_\_\_ cm  
 4 a. 100 cm = \_\_\_\_\_ m 4 b. 500 cm = \_\_\_\_\_ m  
 5 a. 3 m = \_\_\_\_\_ cm 5 b. 1,000 m = \_\_\_\_\_ km  
 6 a. 8 m = \_\_\_\_\_ cm 6 b. 6 m = \_\_\_\_\_ cm  
 7 a. 9,000 m = \_\_\_\_\_ km 7 b. 200 cm = \_\_\_\_\_ m  
 8 a. 5 km = \_\_\_\_\_ m 8 b. 6,000 m = \_\_\_\_\_ km  
 9 a. 2,000 m = \_\_\_\_\_ km 9 b. 900 cm = \_\_\_\_\_ m  
 10 a. 8,000 m = \_\_\_\_\_ km 10 b. 10 km = \_\_\_\_\_ m

### Answer Key

- 1 a. 4 m 1 b. 3 km  
 2 a. 7 m 2 b. 7 km  
 3 a. 4 km 3 b. 1000 cm  
 4 a. 1 m 4 b. 5 m  
 5 a. 300 cm 5 b. 1 km  
 6 a. 800 cm 6 b. 600 cm  
 7 a. 9 km 7 b. 2 m  
 8 a. 5,000 m 8 b. 6 km  
 9 a. 2 km 9 b. 9 m  
 10 a. 8 km 10 b. 10,000 m



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## Chapter 1 Further Questions

1. Students notice that the fall leaves of sugar maple trees turn red, but the leaves of the black oak trees turn brown. The students are making
- an observation.
  - a prediction.
  - an inference.
  - a conclusion.

2. The instrument shown would best be used to measure which property? a. mass

- length
- volume
- temperature



3. What are the items shown?

- Beakers
- Test tubes
- Reagent bottles
- Graduated cylinders



4. **The tools shown would best be used to measure which property?** a. mass

- b. length
- c. volume
- d. temperature



5. **The object shown would be most useful for**

- a. protecting eyes.
- b. transferring liquids.
- c. magnifying objects.
- d. measuring temperature.



6. **In an experiment, to change something or make something different, is known**

- as the**
- a. Independent Variable
  - b. Dependent Variable
  - c. Controlled Variable

7. **A dependent variable is the**

- a. Result you are measuring.
- b. Variable that the scientist changes.
- c. Amount of something you add to a mixture.
- d. Group you do not change.

8. **Constants in an experiment.**

- a. do not change
- b. always change

c. sometimes change

d. are seldom used

**9. What are the items shown?**

a. Beakers

b. Pipettes

c. Droppers

d. Test tubes



**10. A description is a statement or drawing, detailing the physical properties of an object, organism, or event.**

a. True

b. False

**11. Which of the following is not a science safety rule?**

a. Always read the directions prior to beginning an experiment.

b. Tie back long hair if working over an open flame.

c. You may eat and drink in the lab if you have on gloves.

d. Tell your teacher if you are injured in any way.

**12. A tool used to measure temperature.**

a. rain gauge

b. wind vane

c. thermometer

d. forecast

**13. A hypothesis is**

a. an educated guess that answers your question

b. the answer you get when you do an experiment

c. the conclusion of your experiment

**14. Using one or more senses to gather information is called a.**

- classifying
- b. observing
- c. inquiry
- d. communicating

**15. If I see that the ground is wet and that there are very dark clouds in the sky, I can infer that it rained.**

- a. True
- b. False

**16. Look at the picture. What does a ruler measure?**



- a. how much space matter takes up
- b. the length of an object
- c. how much matter an object has
- d. how much time has passed

**17. Mr. Kirchner's chair is red. This is a(n)**

- a. inference
- b. prediction
- c. observation
- d. classification

**18. Identify the type of observation made in the following sentence: He ate twenty-five French fries today.**

- a. Qualitative
- b. Quantitative

19. The table shows the steps of the scientific method in the wrong order.

<b>Scientific Method</b>	
<b>Step</b>	<b>Description</b>
A	Form hypothesis
B	Analyze data
C	Perform experiment
D	Communicate results
E	Ask question

Which sequence shows the steps of the scientific method in the correct order?

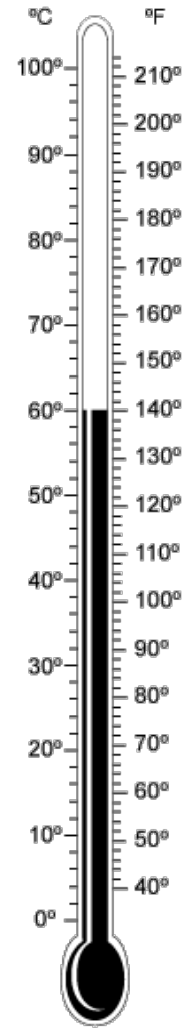
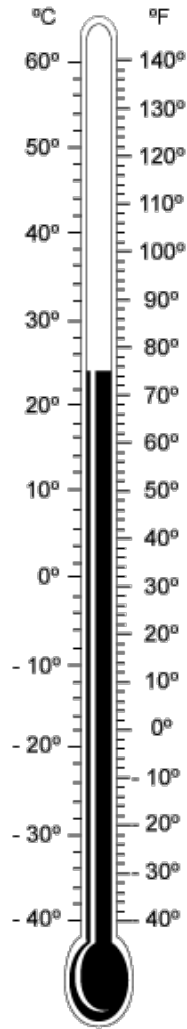
- a. A, C, E, D, B
- b. E, A, C, B, D
- c. A, E, D, C, B
- d. E, C, A, B, D
- e. C, B, A, D, E

20. Which thermometer shows the higher temperature?

Thermometer A

Thermometer B

- a. Thermometer A
- b. Thermometer B



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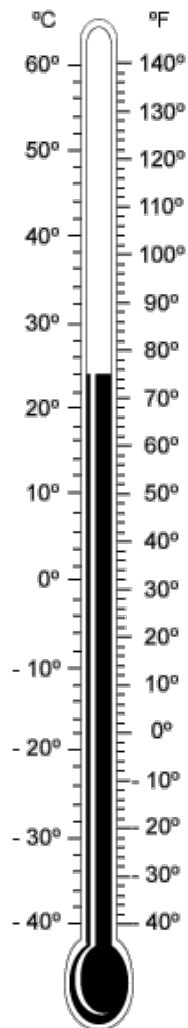
- a. A, C, E, D, B

- b. E, A, C, B, D  
 c. A, E, D, C, B  
 d. E, C, A, B, D  
 e. C, B, A, D, E

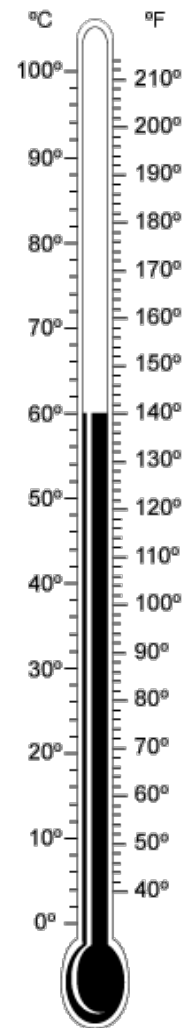
20. Which thermometer shows the higher temperature?

- a. Thermometer A  
 b. Thermometer B

Thermometer A



Thermometer B



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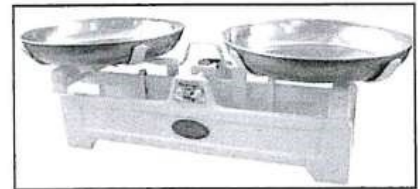
**Past Exam Paper Questions**

1. Hala is conducting an experiment to see how high a rubber ball bounces when she drops it from different heights. Which is the independent variable in her experiment?

- a. the rubber ball
- b. the height from which the ball is dropped
- c. the height the ball bounces
- d. the mass of the ball

2. Faris is using the tool below. Which metric system unit is he most likely to use with his data?

- a. grams
- b. pounds
- c. meters
- d. cubic centimeters



3. Which type of graph should be used to show the composition of gases in earth's atmosphere?

- a. line graph
- b. Scatter plot
- c. optimum range
- d. circle graph

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**Past Exam Paper Questions Answers**

1	b. the height from which the ball is dropped
2	a. grams
3	d. Circle graph