| Skills for the GED® Test | Skills for the HiSET™ Test |
|---|---|
| • Determine the meaning of symbols, terms and phrases as they are used in scientific presentations.<br>• Identify possible sources of error and alter the design of an investigation to ameliorate that error.<br>• Identify and refine hypotheses for scientific investigations.<br>• Identify the strength and weakness of one or m ore scientific investigations.<br>• Design a scientific investigation.<br>• Reconcile multiple findings, conclusions or theories.<br>• Understand various charts, graphs, and tables. | • Follow precisely a complex multistep procedure when carrying out experiments, taking measurements or performing technical tasks, attending to special cases or exceptions defined in the text.<br>• Understand how to read charts, graphs, and charts. |
| **Tips**<br>• When studying Unit 1 Lesson 1 and 2, it is critical to understand the key terms and processes of scientific thinking in order to apply these ideas to different assessment questions.<br>• Lesson 3 will introduce you to many different graphs and charts. Understanding how to read these will help in the Science and Math portions of the GED® Test. | **Tips**<br>• When preparing for this assessment, practice reading scientific text as it applies to scientific thinking and experiments in order to answer assessment questions.<br>• Lesson 3 will introduce you to many different graphs and charts. Understanding how to read these will help in the Science and Math portions of the HiSET™ Test. |

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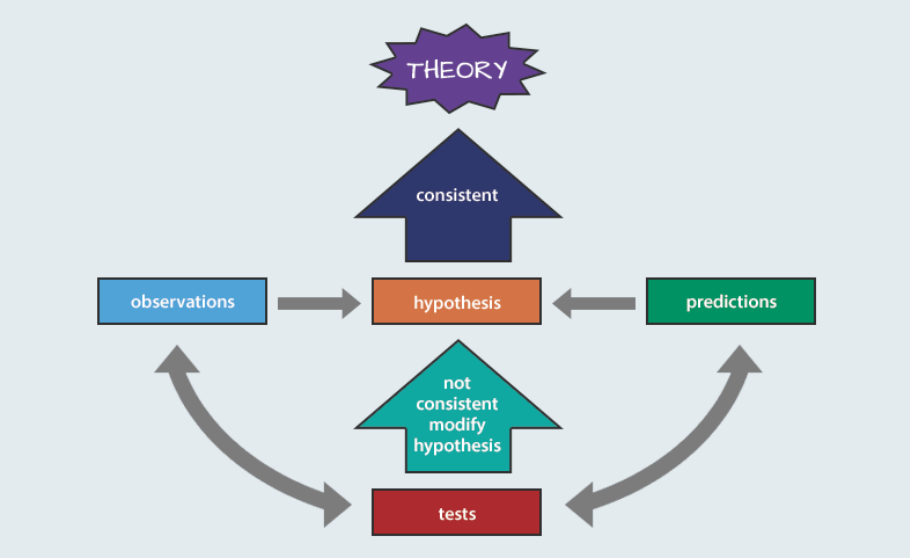
## Lesson 1: Science as Inquiry

**This lesson covers the following information:**

- The scientific method
- The scientific method applied to real world situations
- Reading science based text

**Highlights include the following:**

- When reading scientific text, the questions and concepts that guide scientific investigations are the main ideas.
- Questions to ask when reading scientific passages include…
  - What scientific questions does the passage reinforce?
  - What scientific questions is the paragraph looking to answer?
  - What scientific data is located within the paragraph? Who? What? Where? When, Why? and How?
- Scientists use a series, or process of steps, to answer the questions they ask using a process called the scientific method.
  - Posing a question.




  - Forming a hypothesis.
  - Testing the hypothesis by means of a controlled experiment.
  - Recording and analyzing the data.
  - Drawing a conclusion as to whether the data supports the hypothesis.
  - Repeating the work.
- Scientists will have two groups. One is a control group that always stays the same. The other group is the experimental group. Having two groups allows scientist to compare the results and draw appropriate conclusions.
- Scientists may use pie charts, bar or line graphs, and other types of charts to organize and display their results.

**Reflection:**

- A hypothesis is an educated guess that can be supported or disproved through observation or experimentation.

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- Science is not based on opinion, but on actual facts discovered through inquiry, observation, and experimentation.

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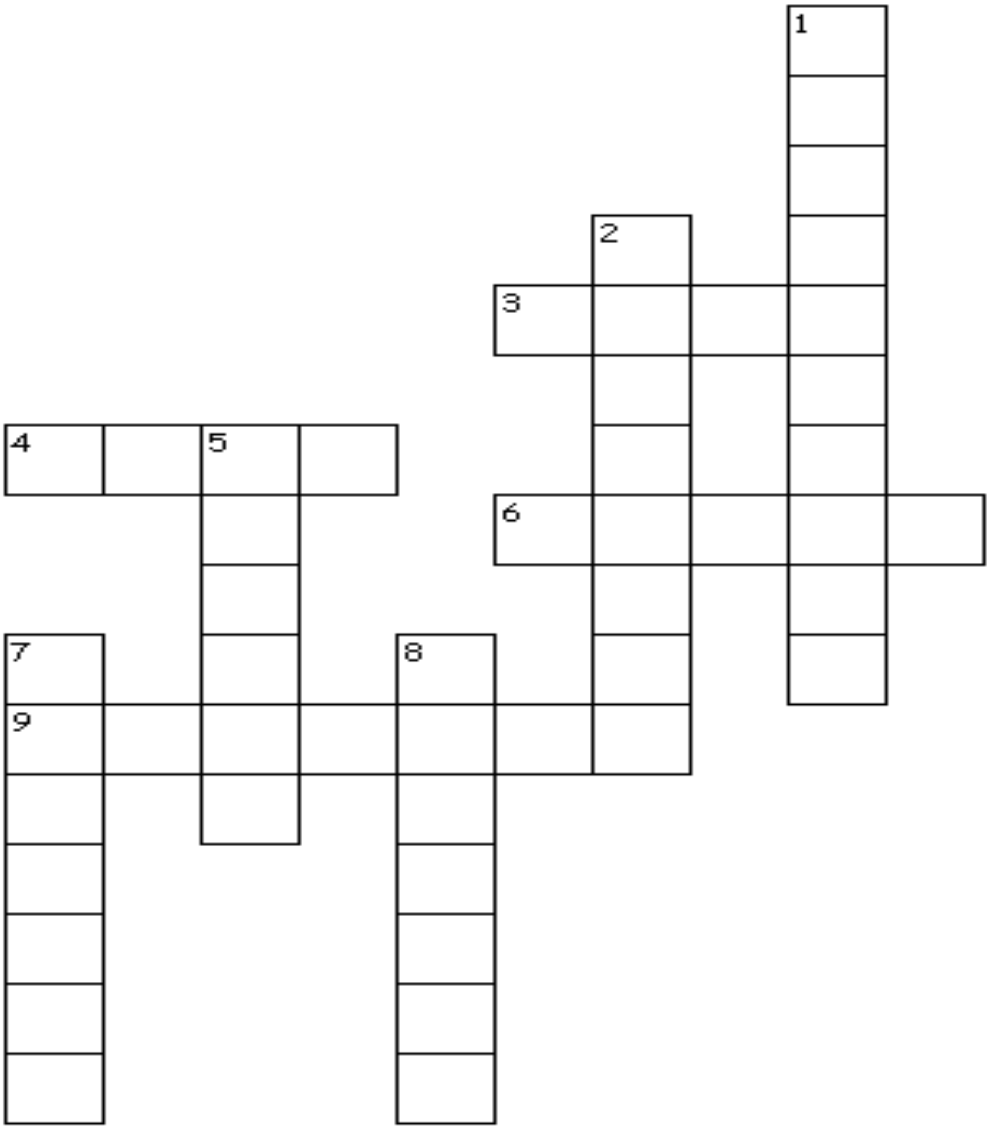
**Crossword Puzzle:**




**Across**

3. A statement that can be proved true.
4. Information gathered from research.
6. Explains why something happened.
9. The problem or question that needs to be analyzed through investigation.

**Down**

1. An educated guess that can be disproved or supported through experimentation and/or observation. It is a reasonable explanation of some scientific fact or observation.
2. A factor that can change the results of an experiment.
5. A group of hypotheses that has withstood the test of time and is therefore a powerful concept that helps scientists make dependable predictions about the world.

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7. A belief that cannot be proved or disproved.
8. A condition or measure that is held constant to ensure that it is not the cause of changes.


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## Lesson 2: Science and Technology

**This lesson covers the following information:**

- DNA
- Using DNA to advance scientific research

**Highlights include the following:**

- DNA is the code that gave you your hair color, eye color, height, weight, and even your personality to some degree.
- Comparing DNA is called DNA typing.
- DNA is in all living things.
- The strands of DNA are grouped into structures called chromosomes.
- Cloning is copying one organism and creating an exact genetic copy.
- Reproduction by cloning is known as asexual reproduction.
- As science and technology continue to evolve, the questions generated with testing a hypothesis are also parallel with moral and ethical concerns.

**Reflection:**

- Scientists, researchers, doctors, and individuals from every walk of life have access to more information at a faster rate than in any time in history.
- This access to information, and understanding DNA and the possibilities with cloning has led to moral and ethical questions.

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**Word Search:**

ASEXUAL
CHROMOSOME
MICROSCOPIC
ORGANISM
ELECTROPHORESIS
ENZYME
CLONE
SURROGATE
HEREDITARY
GENE

U C D I M L F Y H J N B Y J S

W J H M Y Z N M T I M Z H I S

M I C R O S C O P I C R S M U

L R S Z O O R C W S G E N E G

Y A I H U M E I U M R H D V V

W M U K K P O R Y O C E L L Y

T L O X L A R S H S E R Z Y P

A Z A B E O X P O N B E B O T

E Q E D G S O P O M N D J A U

M N A A I R A L D Y E I R W G

Y U T W T I C B A J R T U Y R

Z E U C T E P M S I N A G R O

N J E B L L A W B Y S R I G Y

E L K S B W V S F Z W Y Z Q G

E R Z S B L C D U K X Z V U T

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## Lesson 3 Charts and Graphs in Science.

**This lesson covers the following information…**

- Different types of graphics
- Techniques used when reading graphics

**Highlights include the following:**

- Graphics are very useful in communicating information but they need to be read differently than reading a text or a novel.
- Many graphs are based on coordinate planes.
- Graphs can be used to visually represent the data.
- A bar graph is a visual image that uses horizontal or vertical bars to show and compare quantities.
- A histogram shows data using columns plotted on a chart.
- Bar graphs illustrate date from different categories.
- Histograms represent data from one category and are used to get an overall picture of data points so trends can be identified.
- A circle graph is a visual image that compares a set of data with each other and the whole set where each part represents a percentage of the whole.
- A line graph is a visual image that shows a series of data points connected by straight-line segments.
- Line graphs are on a coordinate grid plane with designated values corresponding to locations on the horizontal and vertical axes.
- The box plot graph is a graph of statistical data based on the minimum, first quartile, median, third quartile, and maximum.
- When data is represented by a large number of ordered pairs, a scatter plot is used. A scatter plot is a set of points plotted in a coordinate plane with 2 axes. Once plotted on the coordinate plane, any correlations or patterns in the data can be observed.

**Reflection**

Bar graphs use horizontal or vertical bars to show and compare quantities. Box plots are based on the minimum, first quartile, median, third quartile, and maximum. Circle graphs compare a set of data with each other and the whole set. Histograms display statistical data and line graphs show a series of data points connected by straight-line segments.

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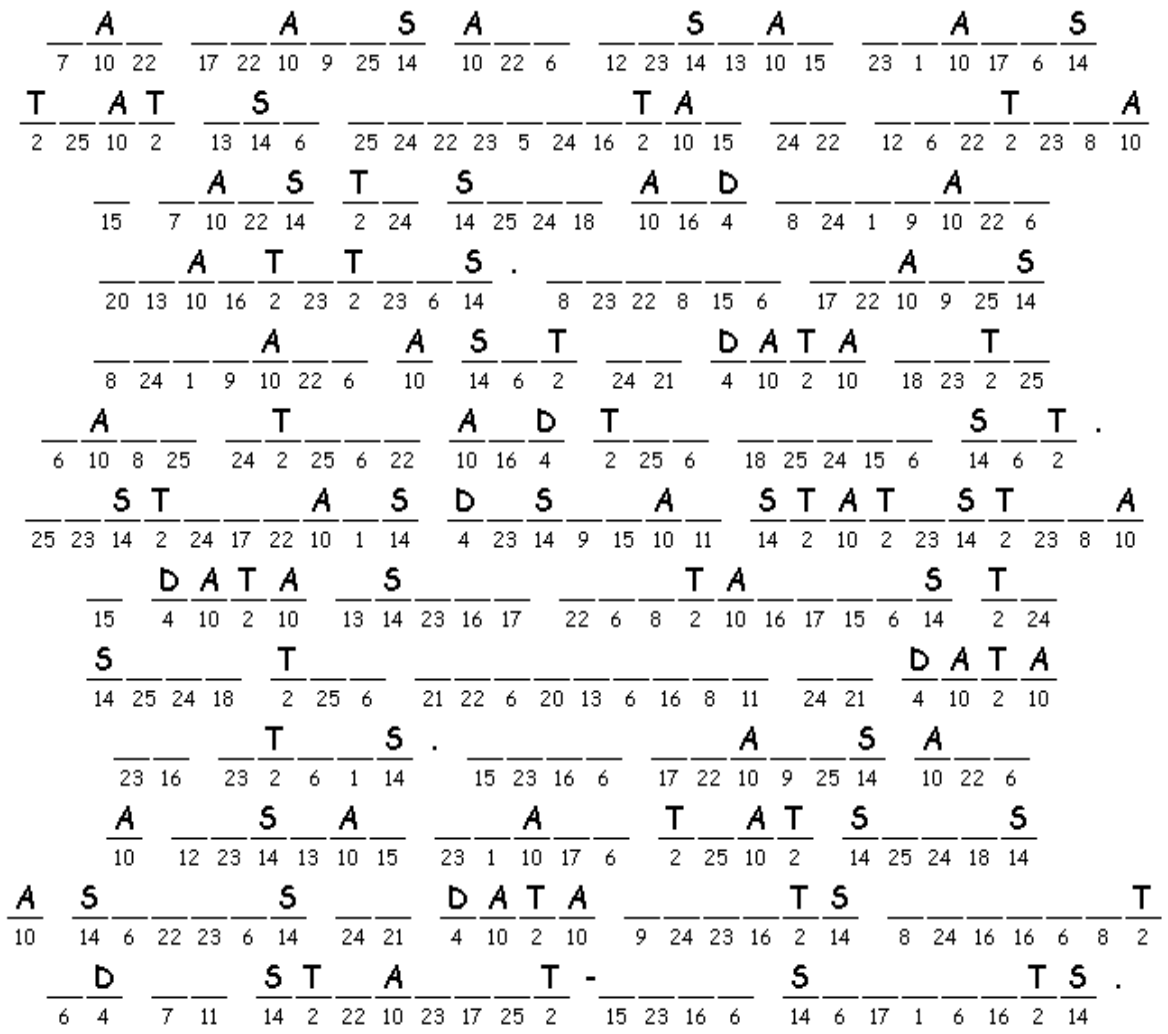
## Cryptogram

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | | | 4 | | | | | | | | | | | | | | | 14 | 2 | | | | | | |

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