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Thank you for supporting us. And, we look forward to helping you with your teaching practice. Please feel free to reach out to us if you have any questions or suggestions.

Sincerely,

Kent  
REAL Science Challenge Founder  
Science Department Head (Burnaby South Secondary)

## Links:

THEORY INTO PRACTICE

2022, Ahead of Print, 1-14

<https://doi.org/10.1080/00405841.2022.2107338>

Is Standards-Based Grading Effective?

Laura J. Linka & Thomas R. Guskey

<https://tguskey.com/wp-content/uploads/TIP-22-Is-Standards-Based-Grading-Effective.pdf>

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

Block: \_\_\_\_\_

### Science 8 Chapter 4 Test

#### True/False

Indicate whether the statement is true or false.

\_\_\_\_ 1. Reflection occurs when light bounces off a surface.

\_\_\_\_\_

\_\_\_\_ 2. A prism separates light into different colours called the visible spectrum.

\_\_\_\_\_

\_\_\_\_ 3.



The diagram above represents a compression wave.

\_\_\_\_\_

\_\_\_\_ 4. Only visible light exists on the electromagnetic spectrum.

\_\_\_\_\_

\_\_\_\_ 5. Microwaves have the shortest wavelength and the highest frequency of all the radio waves.

\_\_\_\_\_

#### Multiple Choice

Identify the choice that best completes the statement or answers the question.

\_\_\_\_ 6. Which term describes light bouncing off a surface?

- |                 |               |
|-----------------|---------------|
| a. luminous     | c. reflection |
| b. non-luminous | d. refraction |

\_\_\_\_ 7. Which of the following is *not* part of the visible spectrum?

- |           |             |
|-----------|-------------|
| a. violet | c. orange   |
| b. yellow | d. infrared |

\_\_\_\_ 8. Which of the following colours has the longest wavelength?

- |         |           |
|---------|-----------|
| a. red  | c. indigo |
| b. blue | d. orange |

- \_\_\_ 9. Refraction ...
- can be transformed into chemical energy, electrical energy, or thermal energy.
  - is the bending of light as it passes from one medium to another.
  - allows no light to pass through it.
  - occurs when light bounces off a surface.
- \_\_\_ 10. What is the name for the *height* of a crest, or the depth of a trough from the rest position?
- wavelength
  - frequency
  - hertz
  - amplitude
- \_\_\_ 11. Which statement best defines “medium”?
- a push or pull on an object
  - the number of oscillations that occur in a given time
  - the capacity to apply a force over distance
  - the matter that waves travel through
- \_\_\_ 12. In a compression wave ...
- the matter in the medium moves back and forth perpendicular to the direction that the wave travels.
  - the matter in the medium moves back and forth along the same direction that the wave travels.
  - the frequency and amplitude always have the same value.
  - the frequency and wavelength always have the same value.
- \_\_\_ 13. Which of the following waves has the shortest wavelength?
- X-rays
  - gamma rays
  - infrared rays
  - ultraviolet rays
- \_\_\_ 14. Dr. Roth is convinced that Ms. Barzangi has a cancerous tumour. He decides that radiation might be the best way of preventing the tumour from spreading. What type of radiation therapy will he likely use on Ms. Barzangi's tumour?
- gamma radiation
  - ultraviolet radiation
  - X-ray
  - infrared radiation
- \_\_\_ 15. Mario is watching a detective show about a search technique that uses motion sensors to locate an escaped prisoner. Mario knows that in order for motion to be detected, an object must be warmer than its surroundings. What type of rays do the motion sensors detect?
- gamma radiation
  - ultraviolet radiation
  - X-ray
  - infrared radiation
- \_\_\_ 16. Marijan is strumming on his guitar. The string vibrates 440 times in 4 s. What is the frequency of the guitar strings?
- 10 Hz
  - 44 Hz
  - 110 Hz
  - 444 Hz
- \_\_\_ 17. What Canadian satellite uses radar to gather data about floods? (Thanks Benjamin!)
- Radarscanner
  - Radarsat
  - Radarsit
  - Radarcast
- \_\_\_ 18. Visible light is found between what other waves on the electromagnetic spectrum? (Thanks Cole N!)
- 10 Hz
  - 44 Hz
  - 110 Hz
  - 444 Hz

**Completion**

*Complete each statement.*

19. The additive primary colours are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
20. A \_\_\_\_\_ is the distance from crest to crest, or from trough to trough.
21. The high parts of waves are called \_\_\_\_\_.
22. \_\_\_\_\_ refers to the number of cycles completed by a vibrating object in a unit of time.
23. Energy such as light that travels by radiation is often called \_\_\_\_\_ energy.

**Short Answer**

24. What is the main difference between a transverse wave and a compression wave?

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25. Explain what the electromagnetic spectrum is. Give five examples of invisible energy in this spectrum.

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26. Provide one advantage and one disadvantage of UV rays? (Thanks Alvin!)

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Quiz – Measurement & Graphing

Curricular Competency	Questions	Emerging	Developing	Proficient	Extending
Processing & Analyzing	7				
Communicating	8				

- 7 Graph the following data using the format (ie. line graph or bar graph) that is the most appropriate. Be sure to label and title your graph, use pencil and ruler to draw, and provide a consistent scale on both the x- and y-axis. Make sure both sets of data appear on the same graph, and find a way to distinguish the different data sets on the graph.

Month	Temp
Jan	7
Feb	8
Mar	10
Apr	13
May	17
Jun	20
Jul	22
Aug	22
Sept	19
Oct	14
Nov	9
Dec	7

Table 1

Month	Temp
Jan	26
Feb	27
Mar	24
Apr	21
May	17
Jun	15
Jul	14
Aug	16
Sept	18
Oct	20
Nov	22
Dec	24

Table 2

8 Using the map below, answer the question below



- A - Vancouver, BC
- B - Los Angeles, California
- C - Cancun, Mexico
- D - Lima, Peru
- E - Melbourne, Australia

Question: Which of the five cities on the map above do the monthly temperatures on Tables 1 and 2 correspond to? Explain using the CER (Claim, Evidence, Reasoning) framework.

Claim - "Table 1 corresponds to <city 1> while Table 2 corresponds to <city 2>"

Evidence - "According to Table 1..... According to Table 2..."

Reasoning - "The temperatures in Table 1 correspond to <city 1> because.... The temperatures in Table 2 correspond to <city 2> because..."

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