

GMIS TEACHERS WORKSHOP JUNE 2021

18/06/2021 (FRIDAY)

**POINT VALUES OF MCQ
BY MR. RAMESH**

MULTIPLE CHOICE QUESTION

- ▶ Consist of a question to which students respond by selecting the best answer from among a number of choices.
- ▶ MCQ testing understand (comprehension), and the ability to apply what students have learned (application).
- ▶ Some questions might assess the ability to analyze or evaluate information (NOT COMMON IN MCQ).

MULTIPLE CHOICE QUESTION

- ▶ MCQ is composed of two parts:
 - ❖ Stem: question or problem
 - ❖ A set of alternatives:
 - i. a key that is the best answer to the question, and
 - ii. a number of distractors that are plausible but incorrect answers to the question.

MULTIPLE CHOICE QUESTION

► Designing Stem (Question)

- i. Express the full problem in the stem (avoid vague stem).
- ii. Put all relevant material in the stem.
- iii. Eliminate excessive wording and irrelevant information from stem.
- iv. Avoid negatively worded stems by stating the stem in a positive form.

MULTIPLE CHOICE QUESTION

- ▶ **Designing Alternatives (Choices)**

POINT VALUES OF MCQ

POINT VALUES OF MCQ

1

HIGHER ORDER THINKING SKILL (HOTS) in MCQ

2

DISTRACTORS

3

TEST THE CONCEPTS IN LOWER GRADES

1

HIGHER ORDER THINKING SKILL (HOTS) in MCQ

CREATING

Produce new or original work

EVALUATING

Justify a stand or decision

ANALYZING

Draw connections among ideas

APPLYING

Use information in new situations

UNDERSTANDING

Explain ideas or concepts

REMEMBERING

Recall facts and basic concepts

1

HIGHER ORDER THINKING SKILL (HOTS) in MCQ

APPLYING

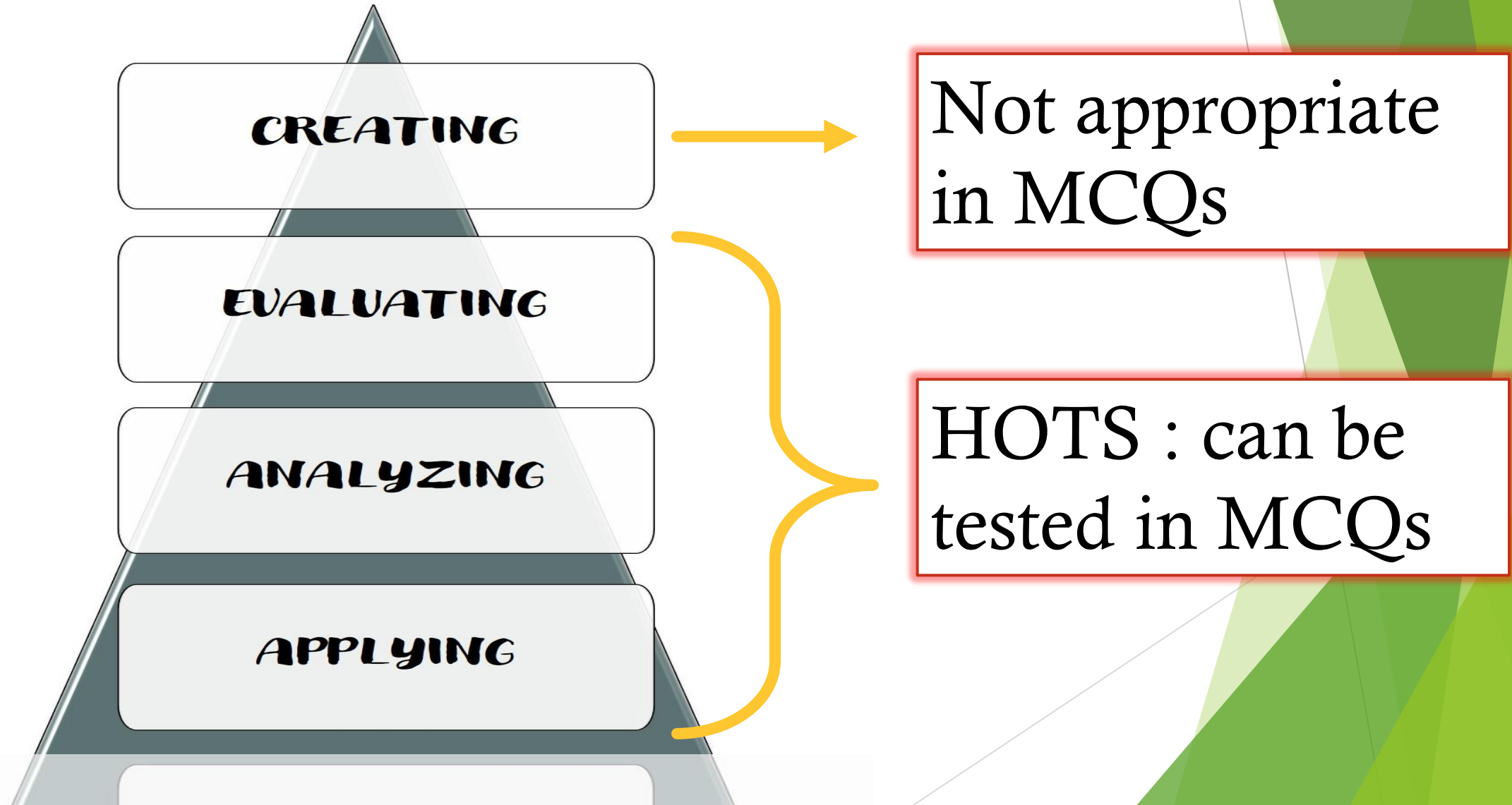
UNDERSTANDING

REMEMBERING

LOTS : MCQs
most often targets

1

HIGHER ORDER THINKING SKILL (HOTS) in MCQ



Not appropriate
in MCQs

HOTS : can be
tested in MCQs

1

HIGHER ORDER THINKING SKILL (HOTS) in MCQ

CREATING

EVALUATING

ANALYZING

APPLYING

UNDERSTANDING

REMEMBERING

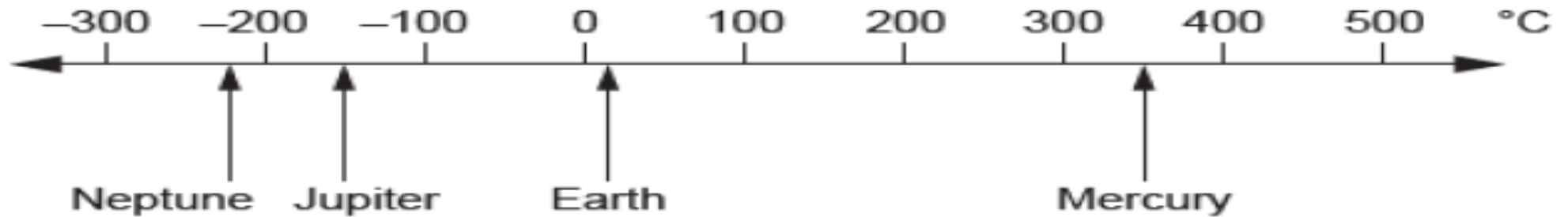
**BLOOM'S
TAXONOMY**

1

HIGHER ORDER THINKING SKILL (HOTS) in MCQ

GRADE 6

The number line shows the surface temperatures of four planets.



Which two planets have a difference in surface temperature of about 500°C?

- A. Jupiter and Mercury
- B. Neptune and Mercury
- C. Earth and Mercury
- D. Neptune and Earth

LEVEL 3: APPLYING

1

HIGHER ORDER THINKING SKILL (HOTS) in MCQ

GRADE 6

Jessica puts a number in her calculator. She multiplies the number by 100 and the calculator shows:

15.48

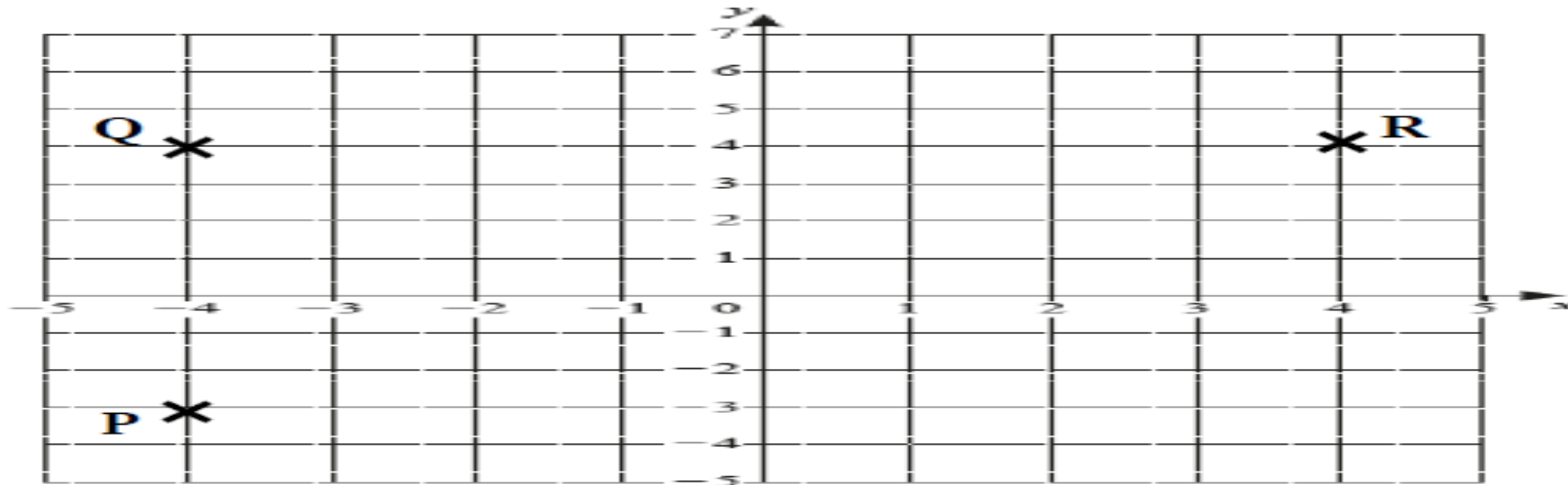
What number did Jessica put in her calculator?

- A. 0.1548
- B. 1.548
- C. 154.8
- D. 1548

LEVEL 4: ANALYZING

1**HIGHER ORDER THINKING SKILL (HOTS) in MCQ****GRADE 7**

The points P, Q and R in the grid below are three corners of a rectangle. Find the coordinate of the fourth corner, S.



- A. (0, -3)
- B. (2, -3)
- C. (3, -3)
- D. (4, -3)

LEVEL 3: APPLYING

1**HIGHER ORDER THINKING SKILL (HOTS) in MCQ****GRADE 7**

Given the equation of the straight line as $y = 6 - 2x$. What are the missing values in the table below?

x	-3	-1	0	2	5
y	p	8	6	q	-4

- A. $p = 12, q = 2$
- B. $p = 12, q = 10$
- C. $p = 0, q = 2$
- D. $p = 0, q = 10$

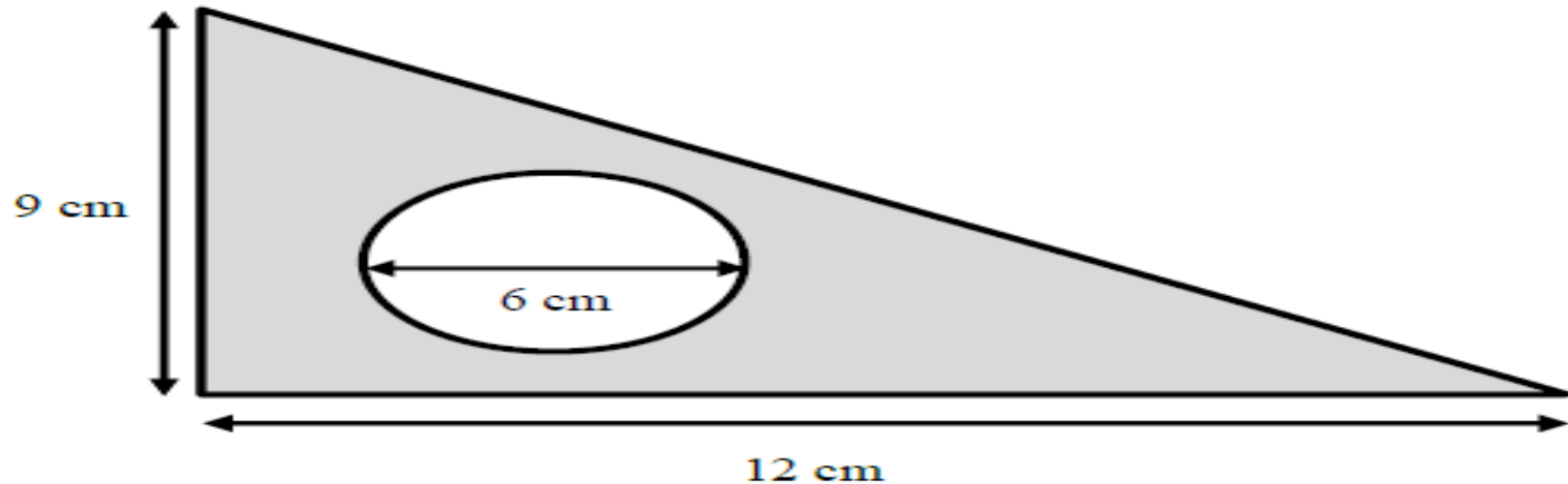
LEVEL 3: APPLYING

1

HIGHER ORDER THINKING SKILL (HOTS) in MCQ

GRADE 8

Work out the area of the shaded region for the following diagram.



- A. 16.30 cm^2
- B. 25.73 cm^2
- C. 35.15 cm^2
- D. 59.09 cm^2

LEVEL 4: ANALYZING

1

HIGHER ORDER THINKING SKILL (HOTS) in MCQ

GRADE 8

Simplify the ratio below.

9 months : 2 years

- A. 3 : 8
- B. 3 : 12
- C. 9 : 2
- D. 9 : 24

LEVEL 3: APPLYING

2

DISTRACTORS

**Incorrect
answer
choices in
MCQ**

DISTRACTORS

2

DISTRACTORS

DISTRACTORS

Most common errors that students do during the lesson or exercises

2

DISTRACTORS

DISTRACTORS

**Students who knows what they
are doing will not make the
mistakes**

MULTIPLE CHOICE QUESTION

► Designing Alternatives (Choices)

- i. Place the choices in some meaningful order (numerical, chronological or conceptual order).
- ii. Distribute same number of correct response.
- iii. Avoid using “all of the above” and “none of the above”.
- iv. Avoid overlapping alternatives.
- v. Avoid dissimilar alternatives.
- vi. Avoid implausible alternatives.
- vii. Avoid inconsistent phrasing of alternatives.

Designing Alternatives (Choices)

- ▶ Avoid overlapping alternatives.

Poor Example

- ❖ What is the average effective radiation dose from chest CT?
 - 1-8 mSv
 - 8-16 mSv
 - 16-24 mSv
 - 24-32 mSv

Good Example

- ❖ What is the average effective radiation dose from chest CT?
 - 1-7 mSv
 - 8-15 mSv
 - 16-24 mSv
 - 24-32 mSv

Designing Alternatives (Choices)

- ▶ Avoid dissimilar alternatives.

Poor Example

- ❖ Idaho is widely known as:
 - a. The largest producer of potatoes in the United States.
 - b. The location of the tallest mountain in the United States.
 - c. The state with a beaver on its flag.
 - d. The “Treasure State.”

Good Example

- ❖ Idaho is widely known for its:
 - a. Apples.
 - b. Corn.
 - c. Potatoes.
 - d. Wheat

Designing Alternatives (Choices)

- ▶ Avoid implausible alternatives.

Poor Example

- ▶ Which of the following artists is known for painting the ceiling of the Sistine Chapel?
 - a. Warhol.
 - b. Flinstone.
 - c. Michelangelo.
 - d. Santa Claus.

Good Example

- ▶ Which of the following artists is known for painting the ceiling of the Sistine Chapel?
 - a. Botticelli.
 - b. da Vinci.
 - c. Michelangelo.
 - d. Raphael

Designing Alternatives (Choices)

- ▶ Avoid inconsistent phrasing of alternatives.

Poor Example

- ❖ The term operant conditioning refers to the learning situation in which:
 - a. A familiar response is associated with a new stimulus.
 - b. Individual associations are linked together in sequence.
 - c. A response of the learner is instrumental in leading to a subsequent reinforcing event.
 - d. Verbal responses are made to verbal stimuli.

Good Example

- ❖ The term operant conditioning refers to the learning situation in which:
 - a. A familiar response is associated with a new stimulus.
 - b. Individual associations are linked together in sequence.
 - c. The learner's response leads to reinforcement.
 - d. Verbal responses are made to verbal stimuli.

2

DISTRACTORS

Given the equation of the straight line as $y = 6 - 2x$. What are the missing values in the table below?

x	-3	-1	0	2	5
y	p	8	6	q	-4

A. $p = 12, q = 2$

B. $p = 12, q = 10$

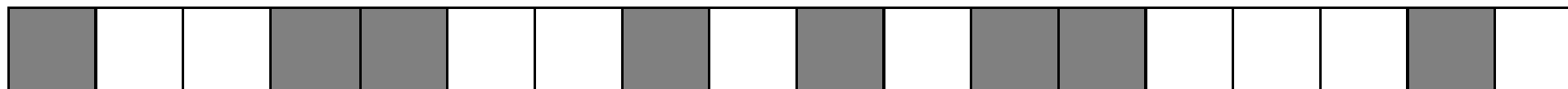
C. $p = 0, q = 2$

D. $p = 0, q = 10$

2

DISTRACTORS

What is the ratio of grey squares to white squares in its simplest form for the following diagram?



A. 8 : 10

B. 4 : 5

C. 10 : 8

D. 5 : 4

2

DISTRACTORS

Ahmad plays chess against his father. Ahmad's probability of winning is 0.1. His probability of losing is 0.3. Find the probability that Ahmad will not win.

A. 0.3

B. 0.4

C. 0.7

D. 0.9

2**DISTRACTORS**

A is the point $(2.4, 6.2)$, B is the point $(3.6, 2.4)$ and C is the point $(-3.8, -1.4)$. Find the midpoint of AC.

A. $(-3.1, 3.8)$

B. $(3.1, -3.8)$

C. $(-0.7, 2.4)$

D. $(0.7, -2.4)$

2

DISTRACTORS

Simplify the ratio below.

9 months : 2 years

A. 3 : 8

B. 3 : 12

C. 9 : 2

D. 9 : 24

3

TEST THE CONCEPTS IN LOWER GRADES

GRADE 10

3

TEST THE CONCEPTS IN LOWER GRADES

GRADE 10

```
graph TD; A([GRADE 10]) --> B[GRADE 7];
```

GRADE 7

3

TEST THE CONCEPTS IN LOWER GRADES

GRADE 10



```
graph TD; A([GRADE 10]) --> B[GRADE 8];
```



GRADE 8



3

TEST THE CONCEPTS IN LOWER GRADES

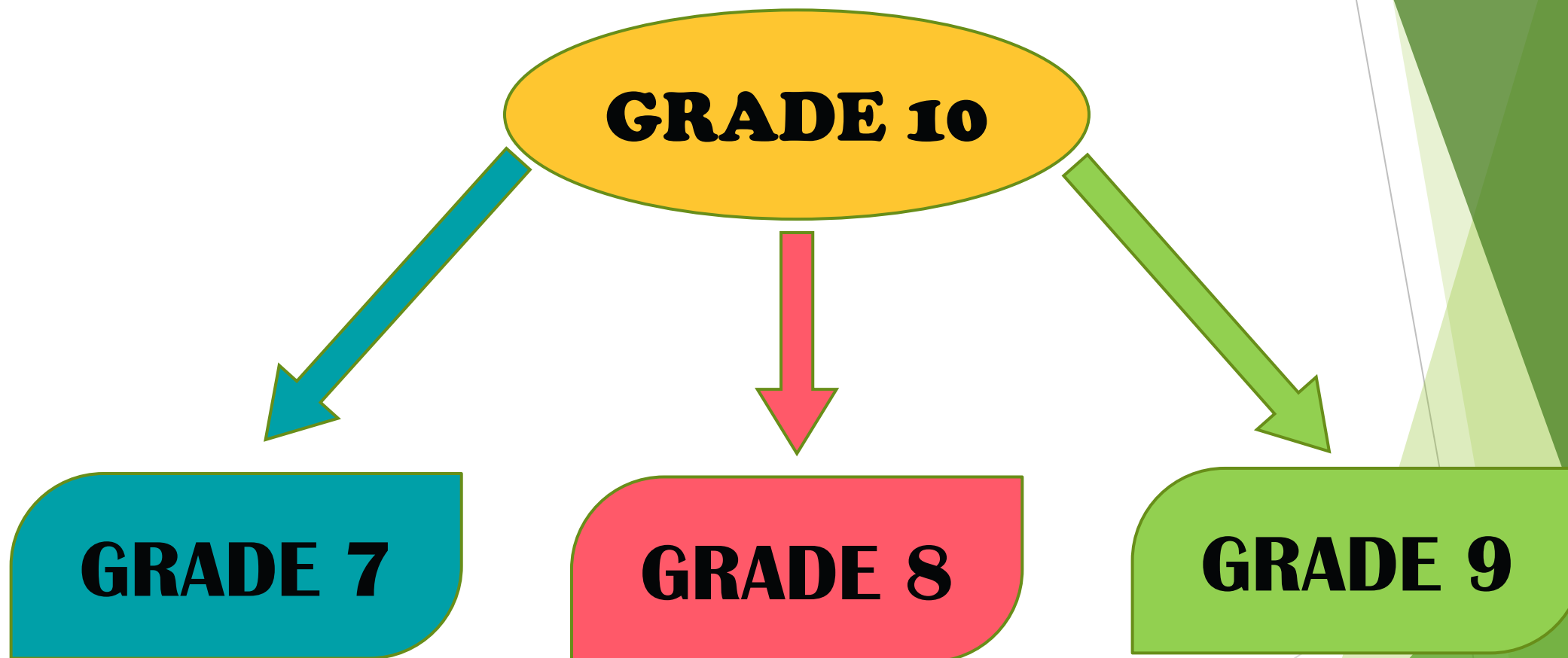
GRADE 10

```
graph TD; A([GRADE 10]) --> B[GRADE 9];
```

GRADE 9

3

TEST THE CONCEPTS IN LOWER GRADES



3

TEST THE CONCEPTS IN LOWER GRADES

Here is a sequence of numbers.

7, 5, 3, 1, -1, ...

GRADE 7, 8 & 9

(a) Find the next term in this sequence.

-----[1]

(b) Find an expression for the n th term of this sequence.

-----[2]

3

TEST THE CONCEPTS IN LOWER GRADES

Simplify

$$\frac{x^2 - 5x}{2x^2 - 50}$$

GRADE 9

-----[4]

3

TEST THE CONCEPTS IN LOWER GRADES

Solve the inequality $n + 7 < 5n - 8$.

GRADE 9

[3]

3

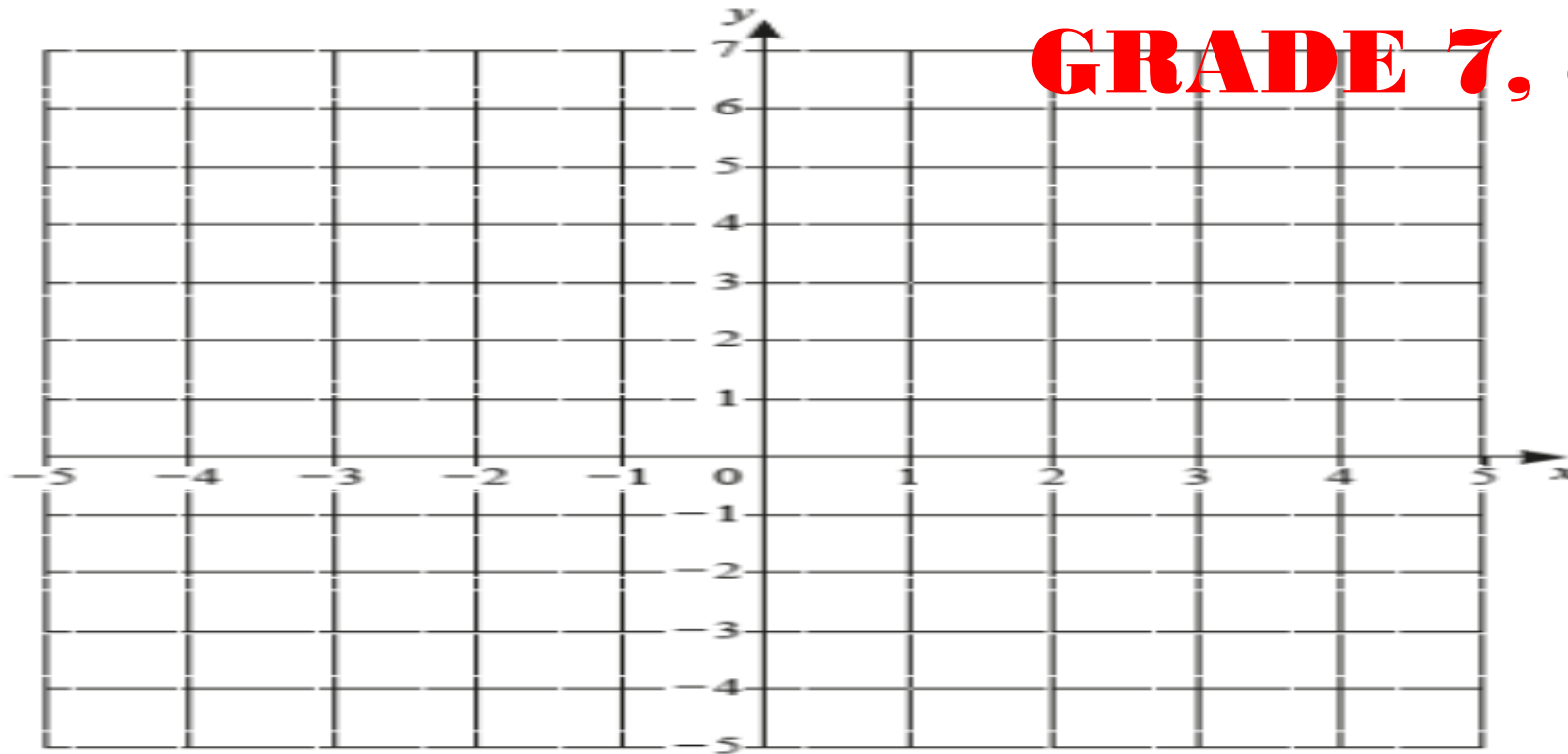
TEST THE CONCEPTS IN LOWER GRADES

By shading the unwanted regions on the grid, draw and label the region R that satisfies the following inequalities.

$$x \geq 2$$

$$y \geq x$$

$$2x + y \leq 2$$



GRADE 7, 8 & 9

Thank you!

The text 'Thank you!' is rendered in a highly decorative, calligraphic font. Each letter is composed of multiple overlapping, ribbon-like strokes. The colors used are red, teal, yellow, and black. The 'T' is red, 'h' is teal, 'a' is black, 'n' is yellow, 'k' is red, 'y' is teal, 'o' is black, and 'u' is yellow. A red exclamation point follows the word 'you'. The background features a white central area with green geometric shapes on the right side.