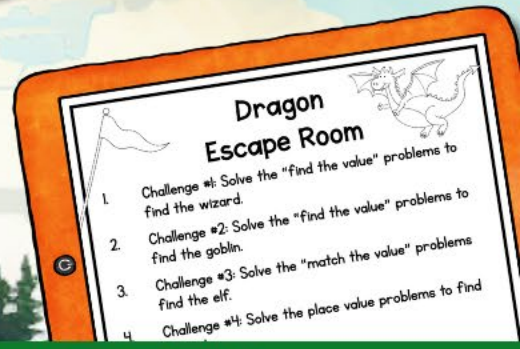
5th Grade

# GRAPH & NUMBER PATTERNS

## SAVE THE DRAGON ESCAPE ROOM




Magi CORE

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# Let's go save the dragon!

Students won't realize they are practicing Graph & Number Patterns skills! They will be immersed in the storytelling and our original videos as they complete math challenges.

Learn more!

# 4 Mathematics Challenges

- Challenges focused on graph & number patterns
- Each challenge takes about 20-30 minutes

Learn more!

## Challenge #1

1. Solve each number pattern problem.
2. Record answers on your brochure.
3. Check your answers in the Dragon Decoder.
4. Add the wizard to your castle.
5. Scan the QR code in the corner of the next page.
6. Move on to challenge #2.

1. To find the wizard, you must first answer some questions about number patterns. Use the given rules to fill in the missing numbers in the table.

| PATTERN A: Add 3 | PATTERN B: Add 5 |
|---|---|
| 2 | 2 |
| 5 | 7 |
| 8 | 13 |
| | |

2. Look at the two patterns in the table below.

| PATTERN X | 1 | 2 | 4 | 8 |
|---|---|---|---|---|
| PATTERN Y | 1 | 3 | 9 | 27 |

What are the rules for the patterns?

a. Pattern X: add 1, Pattern Y: add 2
b. Pattern X: multiply by 2, Pattern Y: add 3
c. Pattern X: multiply by 2, Pattern Y: multiply by 3
d. Pattern X: add 2, Pattern Y: add 3

3. Look at the two patterns in the table below. ... patterns follow the given rules, which number ... table is incorrect?

| | A. | B. |
|---|---|---|
| PATTERN 1: | | |

4. Look at the patterns in the table below. If you continued the patterns based on the given rules, which pattern would eventually include 50?

| PATTERN 1: Add 7 | 5 | 12 | 19 | 26 |
|---|---|---|---|---|
| PATTERN 2: Add 9 | 5 | 14 | 23 | 32 |

a. Neither pattern
b. Pattern 1
c. Pattern 2
d. Both patterns

...issing from the table?

| | | | |
|---|---|---|---|
| 400 | 200 | | 50 |
| 400 | 40 | 4 | 0.4 |

6. Look at the patterns in the table below and determine the rules they follow. Which statement is true?

| PATTERN A | 5 | 27 | 49 | 71 |
|---|---|---|---|---|
| PATTERN B | 1 | 4 | 16 | 64 |

a. Pattern A uses addition and Pattern B uses multiplication
b. Pattern A uses multiplication and Pattern B uses addition
c. Both patterns use addition
d. Both patterns use multiplication

Scan the QR code or click here to view the video.

## Challenge #2

1. Solve each number pattern problem.
2. Record answers on your brochure.
3. Check your answers in the Dragon Decoder.
4. Add the goblin to your castle.
5. Scan the QR code in the corner of the next page.
6. Move on to challenge #3.

1. To find the goblin, you must first answer some questions about number patterns. Look at the patterns in the table below. Which statement is true?

| PATTERN X: Add 8 | 0 | 8 | 16 | 24 |
|---|---|---|---|---|
| PATTERN Y: | 0 | 4 | 8 | 12 |

a. ...ach number in pattern X is 8 more than the ...corresponding number in pattern Y
b. Each number in pattern Y is 4 less than the corresponding number in pattern Y
c. Each number in pattern X is two times the corresponding number in pattern Y
d. Each number in pattern X is half the corresponding number in pattern Y

2. Look at the patterns in the table below. Which statement is true?

| PATTERN 1: Multiply by 3 | 1 | 3 | 9 | 27 |
|---|---|---|---|---|
| PATTERN 2: Multiply by 6 | 1 | 6 | 36 | 216 |

a. The numbers in both patterns get larger as the pattern continues
b. The numbers in pattern 2 get larger faster than the numbers in pattern 1
c. Both A and B are true
d. Neither A or B is true

3. You have two patterns that follow different pattern rules. The numbers in pattern A get smaller as the sequence continues. The numbers in pattern B get bigger. Which statement could be true?

a. Pattern A uses subtraction, pattern B uses division
b. Pattern A uses addition, pattern B uses multiplication
c. Pattern A uses multiplication, pattern B uses subtraction
d. Pattern A uses division, pattern B uses addition

# 4 Mathematics Challenges

- Themed videos integrated throughout the Escape Room to keep kids engaged.
- Students work in groups, partners, or independently.

Learn more!

## Challenge #3

1. Solve each word problem with patterns.
2. Record answers on your brochure.
3. Check your answers in the Dragon Decoder.
4. Add the elf to your castle.
5. Scan the QR code in the corner of the next page.
6. Move on to challenge #4.

1. To find the elf, you must go into the Enchanted Forest. In the forest, there are elm and oak trees. The elm trees have 5 leaves on the highest branch, 9 leaves on the one below it, then 13 on the one below that, and the sequence continues. The oak trees have 5 leaves on the highest branch, 11 on the one below it, then 17 on the one below that, and the sequence continues. How many more leaves are on

2. You find two fairies in the forest sorting gemst... The blue fairy makes a pile of 51 stones. Each pi... makes has 9 stones fewer than the pile before... yellow fairy makes a pile of 9 stones. Each pile... makes has 5 stones more than the pile before i... which pile do the blue and yellow fairies have th... number of gemstones?

   a. The fourth pile
   b. The third pile
   c. The fifth pile
   d. The fairies never have the same number

3. You come across a clearing with some small hot... in the forest. In the first hot spring, there are... rocks and 7 brown rocks. In the second hot sp... there are 7 gray rocks and 9 brown rocks. In...

4. As you walk through the forest, you find this input-output table carved in a tree. Which of the following rules correctly describes how to achieve the output?

| INPUT | OUTPUT |
|---|---|
| 3 | 8 |
| 4 | 10 |
| 5 | 12 |
| 6 | 14 |

   a. Add 6 to input
   b. Add 2 to input, then multiply by 2
   c. Subtract 1 from input, then multiply by 4
   d. Multiply input by 2, then add 2

5. In the forest, you stumble upon some piles of leaves and ...pinecones. In one pile, there are 6 pinecones and 18 leaves. In another pile, there are 3 pinecones and 9 leaves. A third ...as 9 pinecones and 27 leaves. If the pattern cont... ...pinecones are in a pile with...

6. There are two streams in the forest. The water in the streams travels at different speeds depending on the time of day. The water in the first stream moves at 4 miles per hour at 9 am. At 10 am, it moves at 6 miles per hour, and at 11 am, it moves at 8 miles per hour. The water in the second stream moves at 2 miles per hour at 9 am, 5 miles per hour at 10 am, and 8 miles per hour at 11 am. If the patterns continue, what is the difference in the water speed between the two streams at 2 pm?

   a. 4 miles per hour
   b. 6 miles per hour
   c. 5 miles per hour
   d. 3 miles per hour

Scan the QR code or click here to view the video.

## Challenge #4

1. Solve each graphing problem.
2. Record answers on your brochure.
3. Check your answers in the Dragon Decoder.
4. Add the sword to your castle.
5. Scan the QR code in the corner of the next page.
6. Defeat the rider and find the dragon!

1. To find the goblin, you must answer some questions about graphing patterns. Two patterns are shown in the table below. Which of the following ordered pairs could be created from the numbers in the table?

| X | Y |
|---|---|
| 6 | 10 |
| 8 | 12 |
| 10 | 14 |
| 12 | 16 |

   a. (8, 12)
   b. (14, 10)
   c. (10, 12)
   d. (6, 8)

2. The rule for the pattern of the table below is that Y is four less than X. Which of the following ... could be created f...

   a. (25, ...
   b. (11, 15...
   c. (20, 16...
   d. (12, 16...

3. Which point on th... ordered pair from...

| X | Y |
|---|---|
| 2 | 4 |
| 6 | 8 |
| 18 | 16 |
| 54 | 32 |

# 3 Versions

- Print
- Google Slides
- Webscape™ (Our most popular experience)

Learn more!

## Challenge #1

1. Solve each number pattern problem.
2. Record answers on your brochure.
3. Check your answers in the Dragon Decoder.
4. Add the wizard to your castle.
5. Scan the QR code in the corner of the next page.
6. Move on to challenge #2.

1. To find the wizard, you must first answer some questions about number patterns. Use the given rules to fill in the missing numbers in the table.

| PATTERN A: Add 3 | PATTERN B: Add 5 |
|---|---|
| 2 | 7 |
| 5 | |
| 8 | |
| | |

a. 12 ; 15
b. 11 ; 18
c. 11 ; 16
d. 10 ; 18

## Challenge 1 Working with Number Patterns

To find the wizard, you must first answer some questions about number patterns. Use the given rules to fill in the missing numbers in the table.

| PATTERN A: Add 3 | PATTERN B: Add 5 |
|---|---|
| 2 | 2 |
| 5 | 7 |
| 8 | 13 |
| | |

a. 12 ; 15



1 To find the wizard, you must first answer some questions about number patterns. Use the given rules to fill in the missing numbers in the table.

12 ; 15 | 11 ; 18 | 11 ; 16 | 10 ; 18

| Pattern A: Add 3 | Pattern B: Add 5 |
|---|---|
| 2 | 2 |
| 5 | 7 |
| 8 | 13 |
| | |

| | PDF | Google Slides | Webscape™ |
|---|---|---|---|
| **Format Type** | Printable | Digital | Digital |
| **Device** | N/A | Any Device | Any Device |
| **Required Prep** | Print & Go | Copy & Share | Zero Prep |
| **Student Answers** | Printable Answer Pamphlet | Google Sheets Decoder Tool | Integrated Challenge Hub |
| **Self Correcting** | Includes Answer Key | Self Correcting | Self Correcting |
| **Custom Videos** | QR Codes | Embedded You Tube | Embedded |
| **Audio Readings** | N/A | No Audio Readings | Contains Audio Readings |
| **Navigation** | N/A | Student Directed | Automatically Advancing |
| **Extras** | Early Finish Challenges | Movable Pieces | Interactive Animation |

# 3 Versions

- Print
- Google Slides
- Webscape ™ (Our most popular experience)

Learn more!


# Print

- Cut and paste stamps for each challenge
- Easy to follow
- Optimal for group or partner work
- Recording brochure for answers
- Self-checking decoder
- Certificate of completion

Learn more!


# Print

- OOPS! Cards for differentiation

Learn more!


# Webscape ™

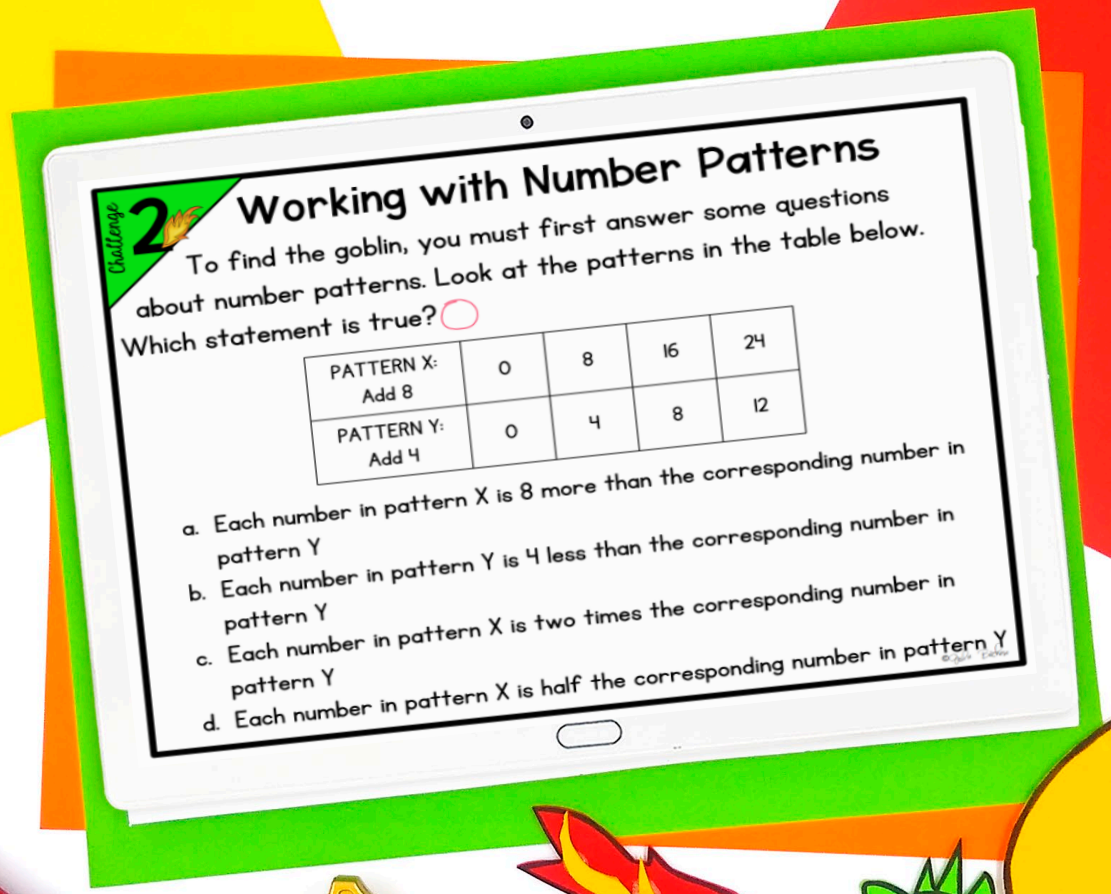
- Most interactive experience
- Self correcting
- Embedded videos
- Embedded audio
- Animation
- Simple navigation

Learn more!


# Webscape ™

- No log ins or sign ups
- Works with any device that has an internet connection and web browser
- Zero prep! Just share the link with your students.

Learn more!




# Google Slides

- One problem per slide
- Students drag to circle their answers

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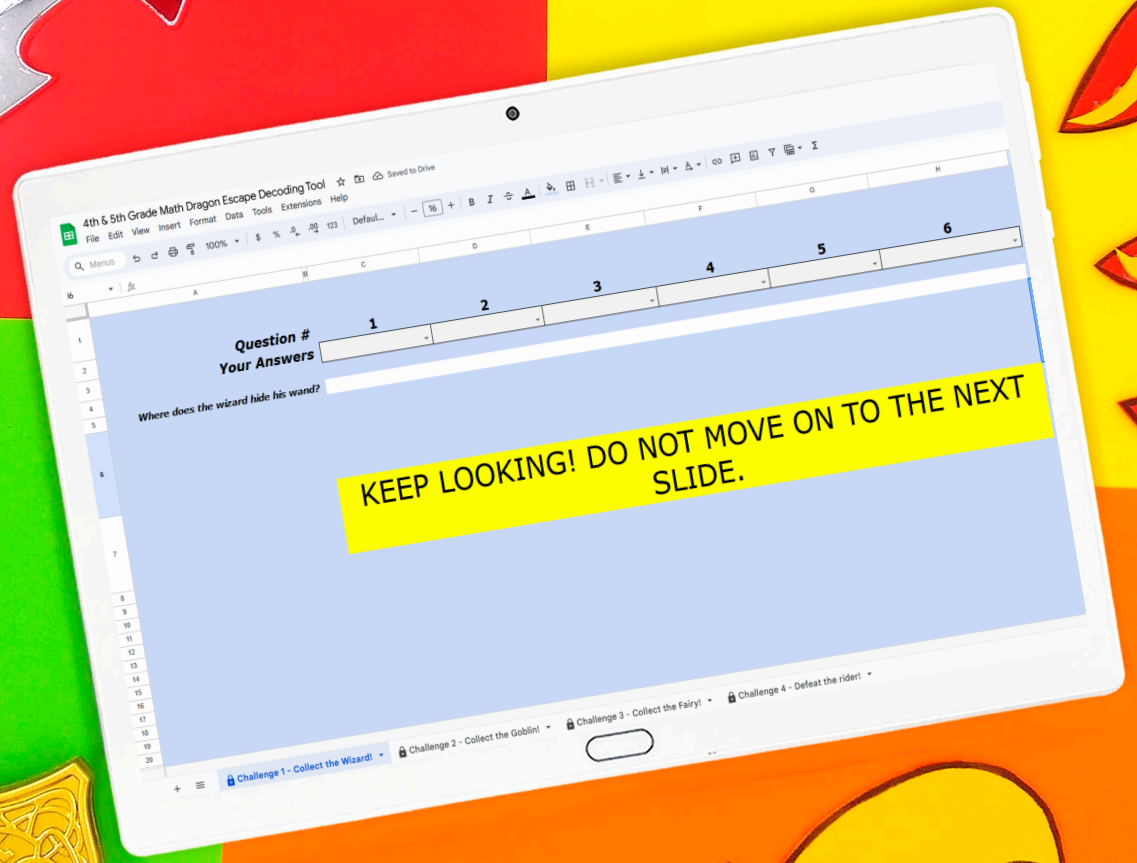
# Google Slides

- Toggle to self-checking decoder
- Decoder will prompt at the end of each challenge whether students are correct or need to check their work.

Learn more!



# Looking for More?