Shade Changes

Sort, explain, and make patterns.

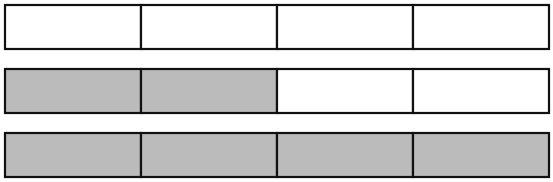
2.A.1 "Describe the relationship found in patterns to solve real-world and mathematical problems. Represent, create, describe, complete, and extend increasing and decreasing patterns with quantity and numbers in a variety of contexts..."

NAME _____ DATE _____

GOING UP

Read the bars from top to bottom. The number of shaded parts goes up by the same amount each time.

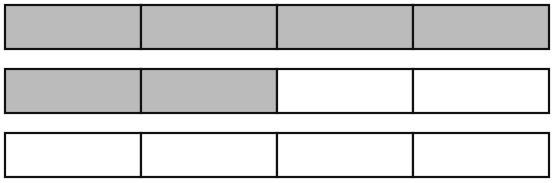
The shaded parts go up by 2 each time.



GOING DOWN

Read the bars from top to bottom. The number of shaded parts goes down by the same amount each time.

The shaded parts go down by 2 each time.



1 SORT

6 items

Circle UP or DOWN for each figure; then pick two figures and tell how you know.

1.

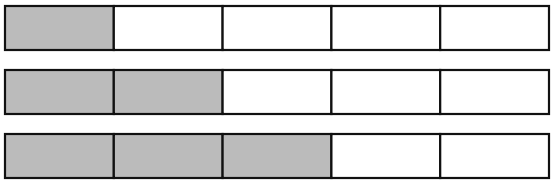


Figure 1

UP DOWN

2.

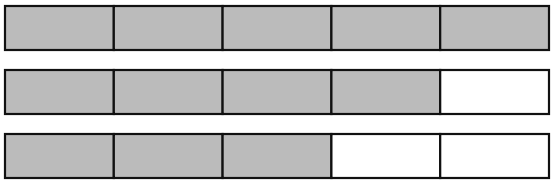


Figure 2

UP DOWN

3.

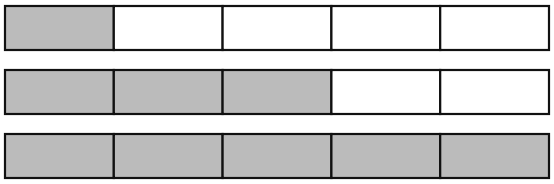


Figure 3

UP DOWN

4.

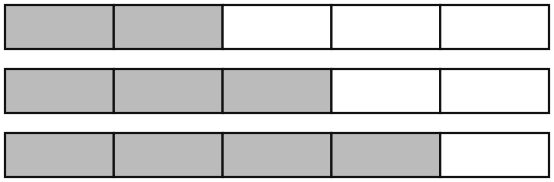


Figure 4

UP DOWN

5.



Figure 5

UP DOWN

6.

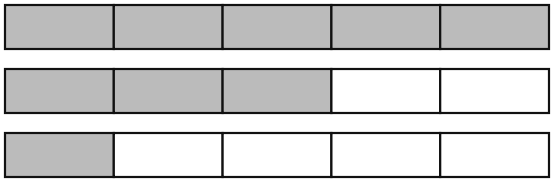


Figure 6

UP DOWN

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Write three shaded-part counts for a new UP pattern and three for a new DOWN pattern.

UP _____

DOWN _____

CHALLENGE

Write three shaded-part counts for 6-part bars that go up by 2 each time.

ANSWER KEY

Shade Changes

GRADE 2 · 2.A.1

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (fractionbars)	**UP**	The shaded count increases by 1 each time.
2	Figure 2 (fractionbars)	**DOWN**	The shaded count decreases by 1 each time.
3	Figure 3 (fractionbars)	**UP**	The shaded count increases by 2 each time.
4	Figure 4 (fractionbars)	**UP**	The shaded count increases by 1 each time.
5	Figure 5 (fractionbars)	**DOWN**	The shaded count decreases by 2 each time.
6	Figure 6 (fractionbars)	**DOWN**	The shaded count decreases by 2 each time.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **UP**: 2, 4, 6
- **DOWN**: 8, 6, 4

Challenge: 1, 3, 5

For Part 2, accept any two figures with explanations that name the direction and equal change in shaded parts.