Reasoning and Problem Solving
Step 2: Describing Turns

National Curriculum Objectives:

Mathematics Year 2: (2P2) Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
Mathematics Year 2: (2P1) Order and arrange combinations of mathematical objects in patterns and sequences

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Explain if a statement about a turn is correct. Includes quarter and half turns, either clockwise or anti-clockwise.
Expected Explain if a statement comparing turns is correct. Includes quarter, half, three quarter and whole turns, either clockwise or anti-clockwise.
Greater Depth Explain if a statement comparing turns is correct. Includes quarter, half, three quarter and whole turns, both clockwise and anti-clockwise in multi-step problems.

Questions 2, 5 and 8 (Reasoning)
Developing Explain the mistake when describing the turn a shape has made. Includes quarter and half turns, either clockwise or anti-clockwise.
Expected Explain the mistake when describing the turn a shape has made. Includes quarter, half, three quarter and whole turns, either clockwise or anti-clockwise.
Greater Depth Explain the mistake when describing the turns a shape has made. Includes quarter, half, three quarter and whole turns, both clockwise and anti-clockwise in multi-step problems.

Questions 3, 6 and 9 (Problem Solving)
Developing Explain the different ways a shape could have turned. Includes half turns either clockwise or anti-clockwise.
Expected Explain the different ways a shape could have turned. Includes quarter and three quarter turns either clockwise or anti-clockwise.
Greater Depth Explain the different ways a shape could have turned. Includes quarter, half, three quarter and whole turns, both clockwise and anti-clockwise in multi-step problems.

More Year 2 Position and Direction resources.

Did you like this resource? Don't forget to review it on our website.

Describing Turns

1a. This frog thinks he has made a quarter turn anti-clockwise.

Before

After

What mistake has he made? Explain.

D

R

Describing Turns

1b. This frog thinks he has made a half turn clockwise.

Before

After

What mistake has he made? Explain.

D

R

2a. A triangle has been turned.

Toby says,

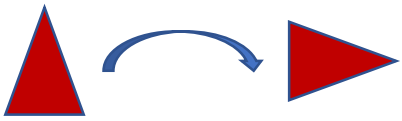
The shape has made a quarter turn clockwise.

Is Toby correct? Explain why.

D

R

2b. A triangle has been turned.



Mary says,

The shape has made a quarter turn anti-clockwise.

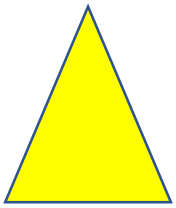
Is Mary correct? Explain why.

D

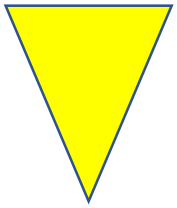
R

3a. How many different ways could Shape A have turned to get to the position of Shape B?

Shape A



Shape B



D

PS

3b. How many different ways could Shape A have turned to get to the position of Shape B?

Shape A

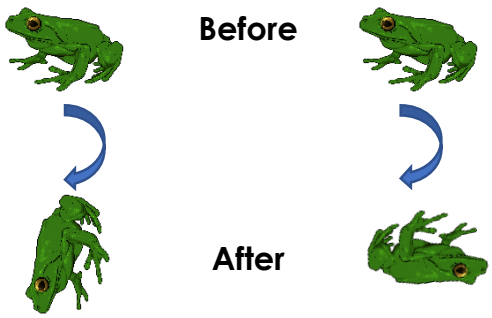
Shape B

D

PS

Describing Turns

4a. Two frogs start in the same position. They want to turn the same amount in the same direction.



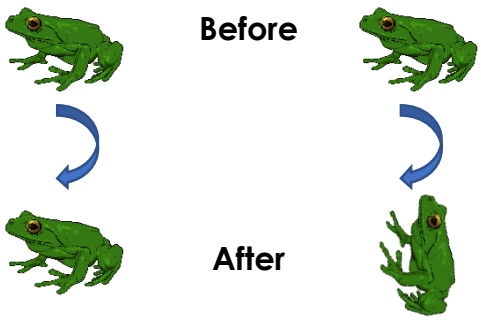
What mistake have they made? Explain.

E

R

Describing Turns

4b. Two frogs start in the same position. They want to turn the same amount in the same direction.



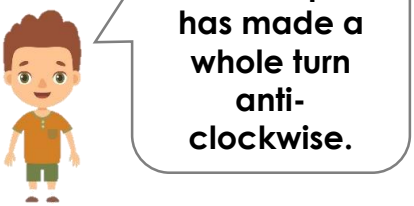
What mistake have they made? Explain.

E

R

5a. A triangle has been turned.

Josh says,



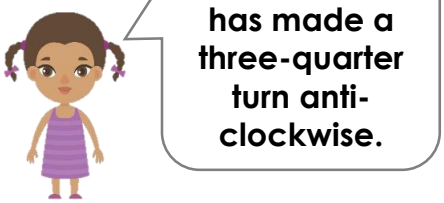
Is Josh correct? Explain why.

E

R

5b. A triangle has been turned.

Asha says,



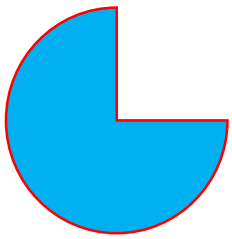
Is Asha correct? Explain why.

E

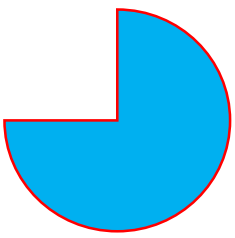
R

6a. How many different ways could Shape A have turned to get to the position of Shape B?

Shape A



Shape B



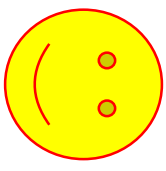
E

PS

6b. How many different ways could Shape A have turned to get to the position of Shape B?

Shape A

Shape B

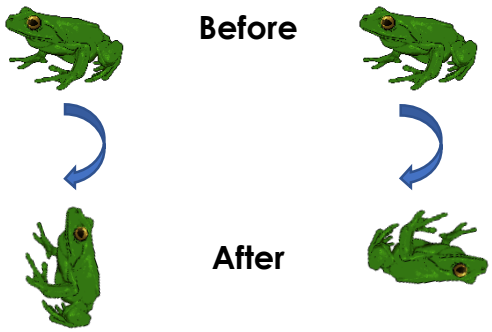


E

PS

Describing Turns

7a. Two frogs start in the same position. They want to make a half turn clockwise and a quarter turn anti-clockwise.

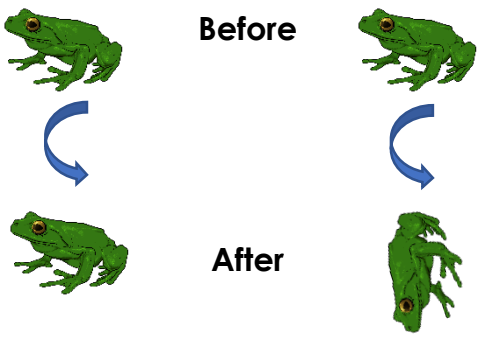


What mistake have they made? Explain.

GD R

Describing Turns

7b. Two frogs start in the same position. They want to make a whole turn anti-clockwise and a three-quarter turn clockwise.

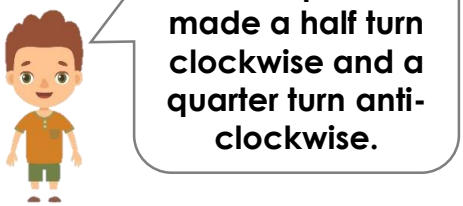


What mistake have they made? Explain.

GD R

8a. A triangle has been turned.

Owen says,

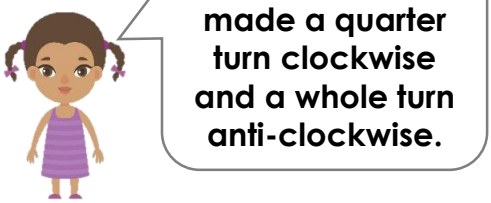


Is Owen correct? Explain why.

GD R

8b. A triangle has been turned.

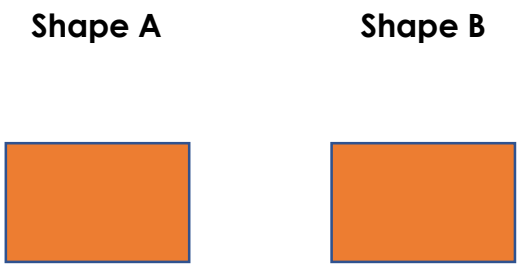
Jess says,



Is Jess correct? Explain why.

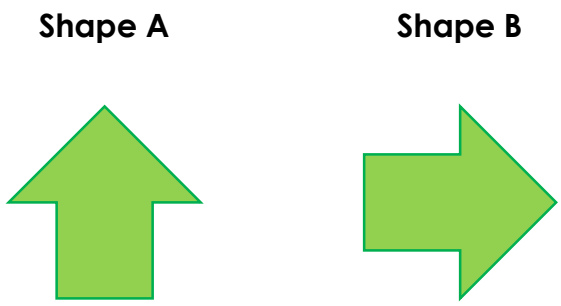
GD R

9a. Shape A has turned twice to get to the position of Shape B. Name 3 different ways it could have turned.



GD PS

9b. Shape A has turned twice to get to the position of Shape B. Name 3 different ways it could have turned.



GD PS

Reasoning and Problem Solving
Describing Turns

Developing

1a. The frog has made a half turn anti-clockwise instead of a quarter turn.

2a. Toby is not correct because the shape has made a half turn clockwise.

3a. 2 ways: a half turn clockwise or a half turn anti-clockwise

Expected

4a. The first frog has made a three quarter turn clockwise and the second has made a half turn clockwise.

5a. Josh is not correct because the shape has made a half turn anti-clockwise.

6a. 2 ways: a three quarter turn clockwise or a quarter turn anti-clockwise.

Greater Depth

7a. The second frog has only made the half turn clockwise and not the quarter turn anti-clockwise.

8a. Owen is not correct because the shape has only made a half turn clockwise.

9a. Various possible answers, for example: a half turn clockwise and a half turn anti-clockwise; a three quarter turn clockwise and a quarter turn anti-clockwise; a whole turn anti-clockwise and a half turn clockwise.

Reasoning and Problem Solving
Describing Turns

Developing

1b. The frog has made a quarter turn clockwise instead of a half turn.

2b. Mary is not correct because the shape has made a quarter turn clockwise.

3b. 2 ways: a half turn clockwise or a half turn anti-clockwise

Expected

4b. The first frog has made a whole turn clockwise and the second has made a quarter turn clockwise.

5b. Asha is not correct because the shape has made a three quarter turn clockwise.

6b. 2 ways: a quarter turn clockwise or a three quarter turn anti-clockwise.

Greater Depth

7b. The first frog has only made the whole turn anti-clockwise and not the three quarter turn clockwise.

8b. Jess is not correct because the shape has only made a whole turn anti-clockwise.

9b. Various possible answers, for example: a half turn clockwise and a quarter turn anti-clockwise; a whole turn clockwise and a three quarter turn anti-clockwise; a half turn anti-clockwise and a three quarter turn clockwise.