

Lesson Printables

Be a rockstar and only print what you need!



Planners: 2-3

Activity

Sunlight: 4-13 (Print double-sided)

Sunlight Rules: 14

Twilight/Midnight: 15-16

Extras

Recording Logs: 17

Legend Recording Logs: 18

Extension Task: 19

Angle Cards: 20

Answers: 21-22

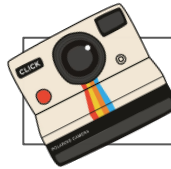
**Printing in the US? Scale to 'fit to printable area' in order to get the best print.*

LESSON 1: Shape and Space - Identifying and measuring angles

Starter	Main Activity and Input: Identifying and measuring angles.	Plenary
<p>Cosmic Calculations: If the moons can be used to make each planet number, can students work out the pattern? What are the missing numbers?</p> <p>To support: 1. Start with the orange planet. How could the numbers be used to make 17? $((4 \times 3) + 5 = 17)$ Does that pattern also work for the red planet?</p> <p>To challenge: 1. What are some other possible planet numbers if you use the same moon numbers but different operations? E.g. Red planet = $(4 \times 3) + 6 = 18$</p>	<p>Input:</p> <p>1. Slide 6 shows a picture of the Angles family. What do students already know about angles? Discuss prior knowledge as a class. Slides 7 to 9 review each type of angle. If applicable, you could line up the corners of a sticky note or piece of paper with each angle in order to help students identify each type of angle.</p> <ul style="list-style-type: none"> - Right angle: 90° and occurs when perpendicular lines meet. - Acute angle: Less than 90° - Obtuse angle: Greater than an acute and right angle. Smaller than a straight angle. Measures between 90° and 180°. - Straight angle: Straight line. Always measures 180°. - Reflex angle: Greater than a straight angle. (We have said to think of someone bouncing on a trampoline and making really big splits like a gymnast.) Measures between 180° and 360°. - Full rotation: 360°. (Skateboarders or other athletes might do a '360', which means moving around in at least 1 full rotation.) <p>2. Slide 10 shows a protractor. Have students seen or used this tool before? What do they know or notice about it? Slides 11 to 14 model the steps for using a protractor to measure angles.</p> <ul style="list-style-type: none"> - Identify the name of the angle. (You could use a sticky note to identify if an angle is exactly 90°, less than 90° or greater than 90°, thus identifying acute, right and obtuse angles.) - Line up the bottom horizontal line of the protractor with one of the lines of the angle. - Make sure the vertice lines up with the 'target zone'. - Use the name of the angle to guide you to which number you should read in order to make a measurement. <p>It is important to remind students to use the name of the angle to help them identify if they should use the big number or small number on the protractor as the measurement.</p> <p>Activity: Measure angles.</p> <p>1. There are 2 possible activities for this lesson.</p> <ul style="list-style-type: none"> - Sunlight Zone: print the Angle Snap cards. Students should sort all matching angles. E.g. All acute angles and degrees that are acute angles should go in the same group. Once students have identified all the angles, they could play the game. Rules can be found in the printables. - Twilight/Midnight Zones: Print and cut out angle cards. Students could work in pairs or individually to estimate and then measure angles. Students will need to have their own protractors. <p>To challenge:</p> <p>1. If students know their angle measurement, what would the reflex angle measurement be? Can students connect to the fact that the two angles should be added together to reach 360°?</p> <p>2. Provide students with the extension challenge found in the printables.</p>	<p>Angle Snap: Shout out an angle and have students show you the angle using their arms or legs. Pretend to 'snap' a picture (or really do this for display purposes!) of students and their angles.</p> <p>Check for understanding: 1. Can students create different angles with their bodies?</p>

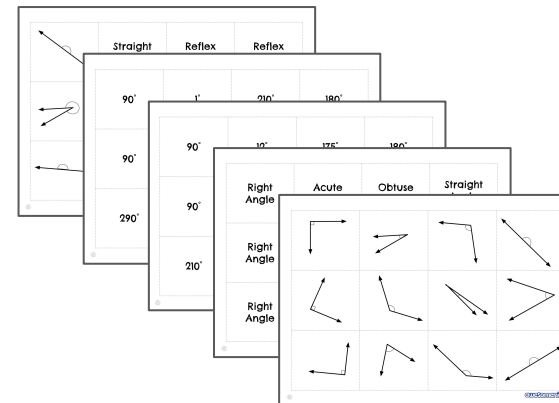
Things that might be useful for this lesson:

- Individual whiteboards:
 - Help students to record their thinking and share ideas with others.
- Print challenge and angle cards:
 - To challenge or support students.
- Protractors
 - Will be used to measure angles.

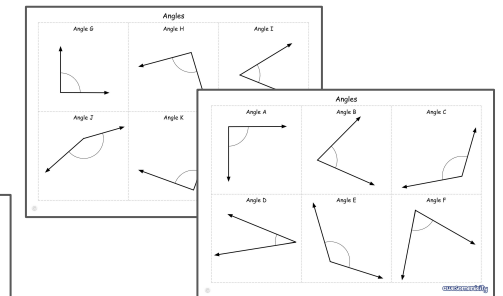


Peek at the Printables:

Sunlight Zone



Twilight/Midnight Zone



Greener Alternatives:

- Laminate Sunlight angle cards so that they can be reused.
- Rather than printing Twilight and Midnight Zone angles, you could create angles using tape or chalk outside. Students could move around, measuring each angle with a protractor.



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!

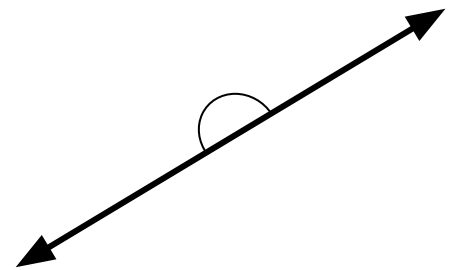
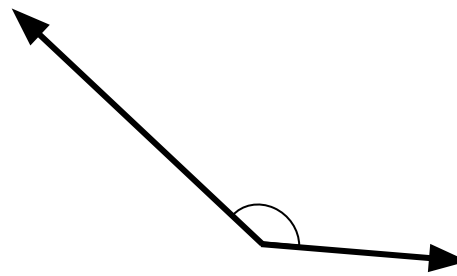
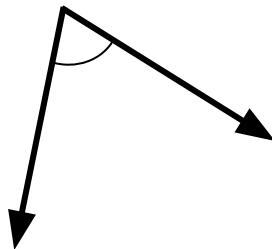
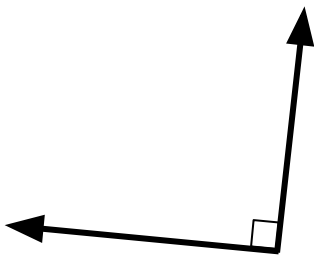
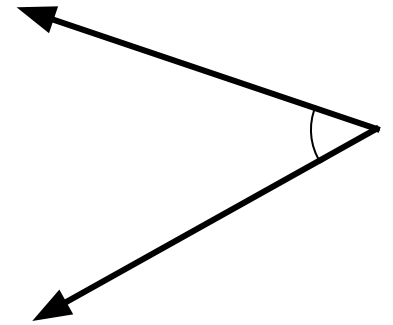
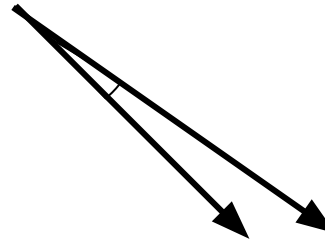
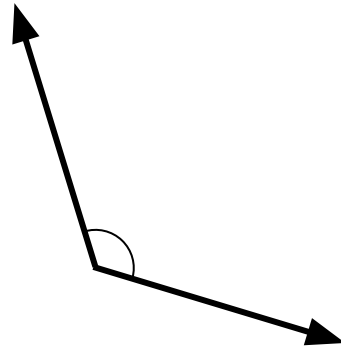
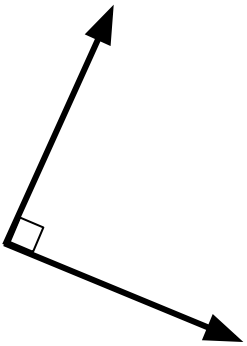
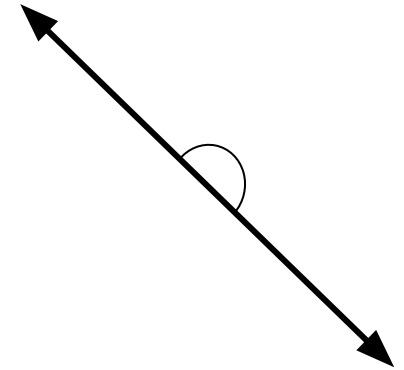
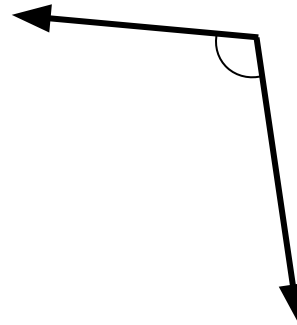
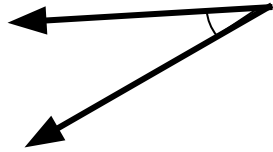
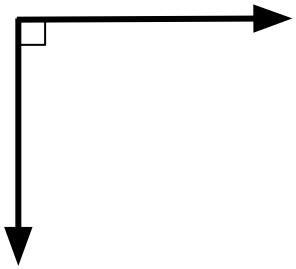


Angle Snap!



Angle Snap!





Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



**Right
Angle**

**Acute
Angle**

**Obtuse
Angle**

**Straight
Angle**

**Right
Angle**

**Obtuse
Angle**

**Acute
Angle**

**Acute
Angle**

**Right
Angle**

**Acute
Angle**

**Obtuse
Angle**

**Straight
Angle**

Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



90°

12°

175°

180°

90°

99°

73°

360°

210°

49°

125°

195°

Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



90°

1°

210°

180°

90°

84°

181°

360°

290°

67°

125°

325°

Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!



Angle Snap!

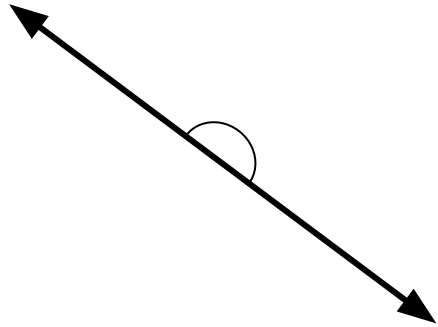


Angle Snap!



Angle Snap!

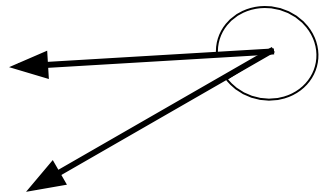




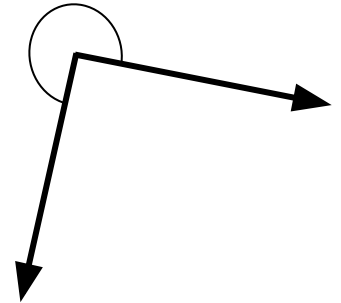
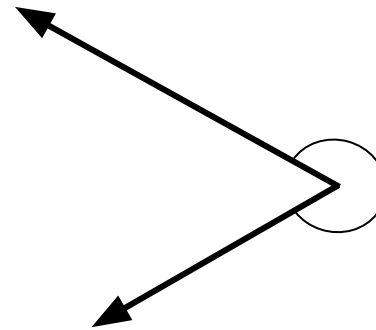
**Straight
Angle**

**Reflex
Angle**

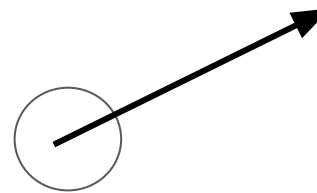
**Reflex
Angle**



**Reflex
Angle**



**Straight
Angle**



**Full
Rotation**

Angle Snap Rules

1. Shuffle the cards.
2. Deal out the cards between all of the players.
→ Players should not look at their cards.
3. Player 1 flips over a card and places it in the middle of the game.
4. Player 2 flips over a card and places it on top of Player 1's card.
5. Is it a match?
→ Yes: Anyone can snap! The player who snaps first gets to keep the cards in the pile.
→ No: The next player puts down their card.
6. The player with the most cards when time is called is the winner.

Angle Snap Rules

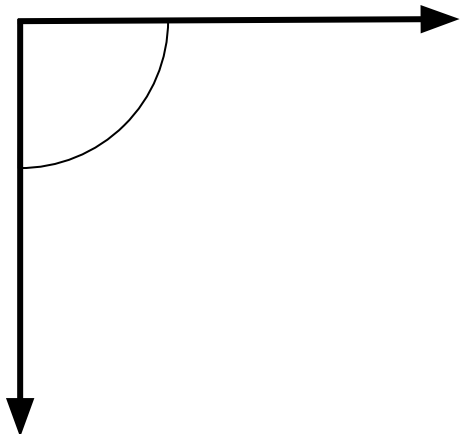
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Angle Snap Rules

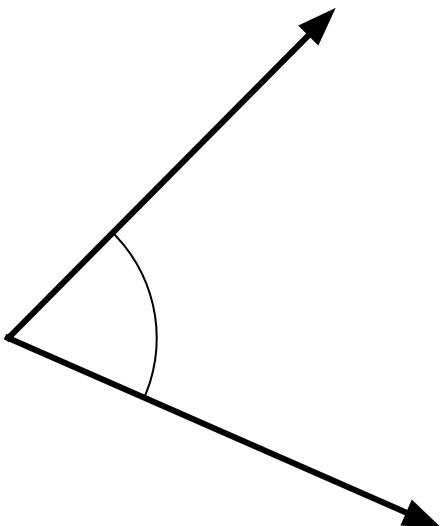
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Angles

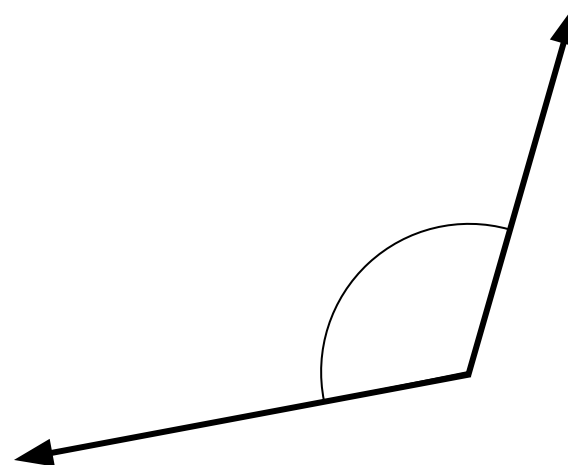
Angle A



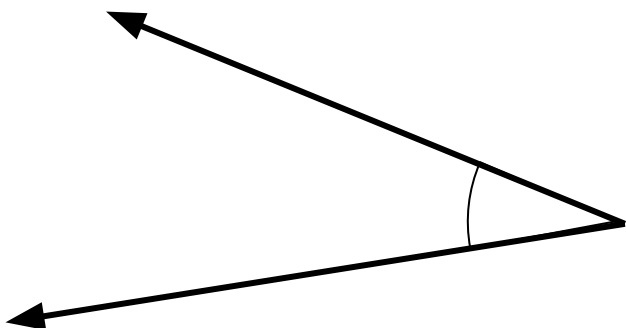
Angle B



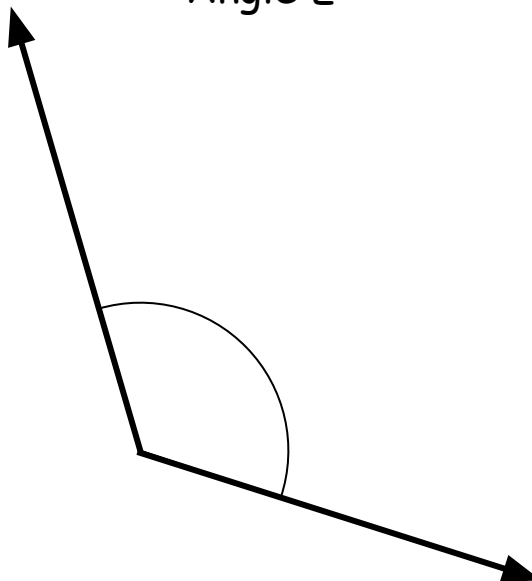
Angle C



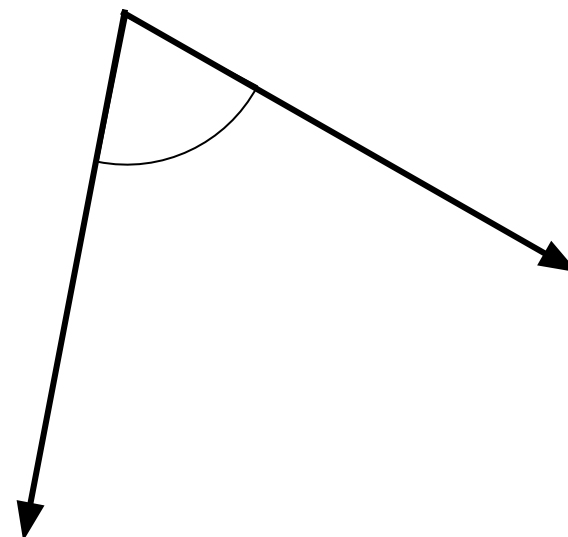
Angle D



Angle E

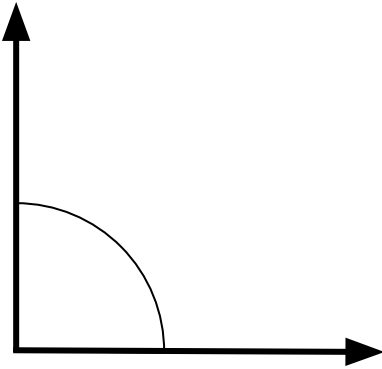


Angle F

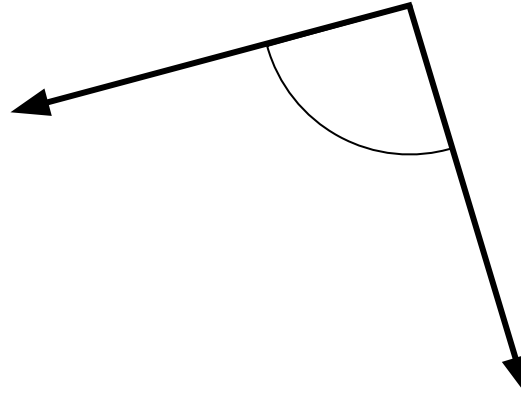


Angles

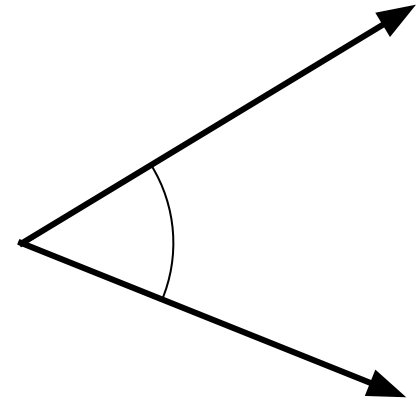
Angle G



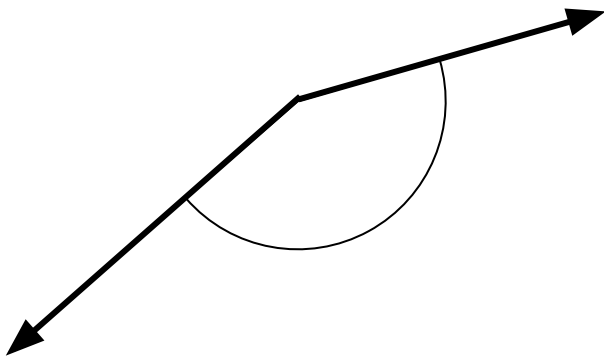
Angle H



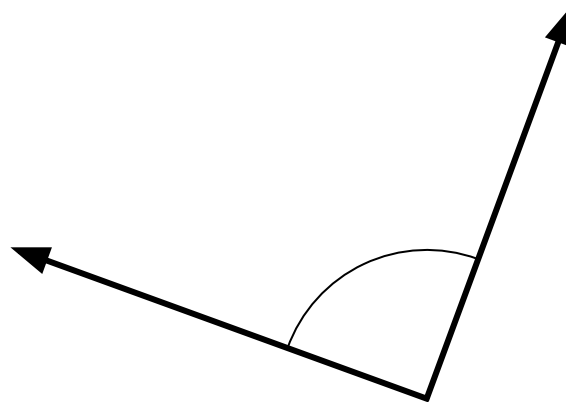
Angle I



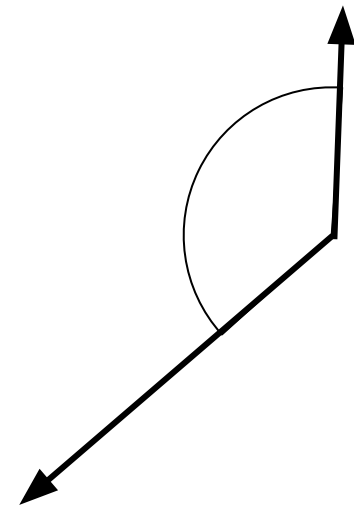
Angle J



Angle K



Angle L



Recording Logs

Letter	Estimation	Measurement

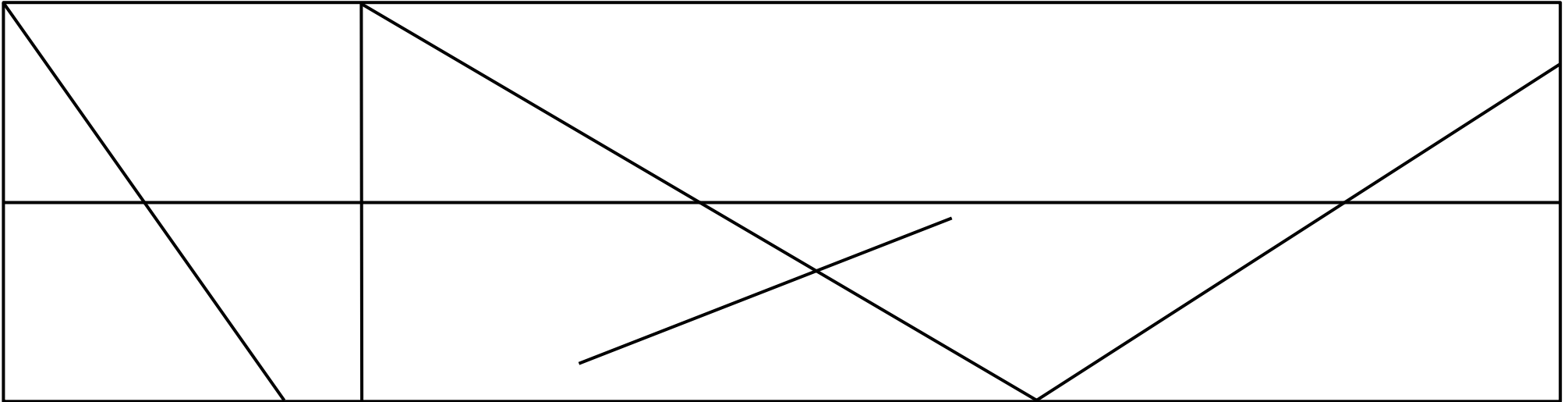
Letter	Estimation	Measurement

Legend Recording Logs

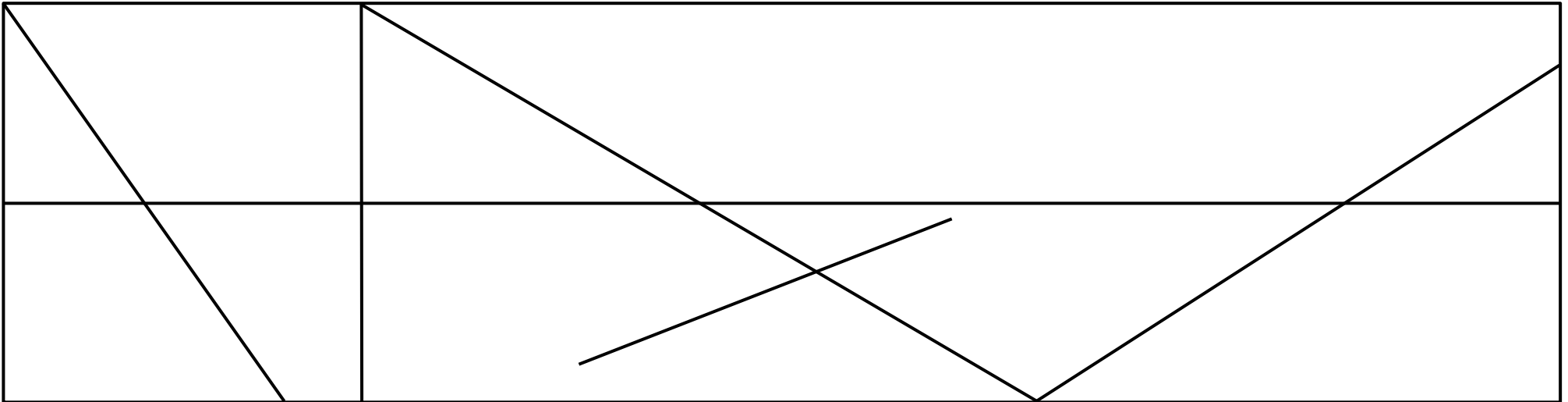
Angle Letter	Estimation	Measurement	Reflex Angle

Angle Letter	Estimation	Measurement	Reflex Angle

Challenge Cards

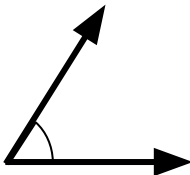
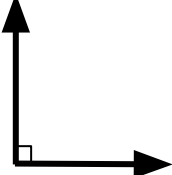
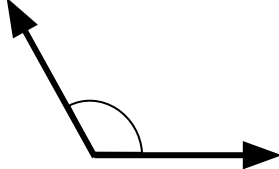

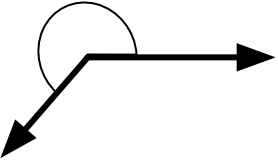
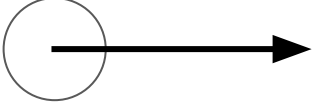


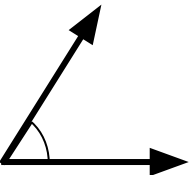
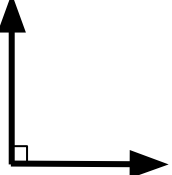
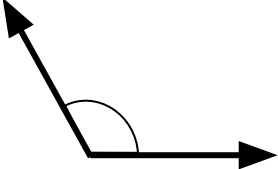

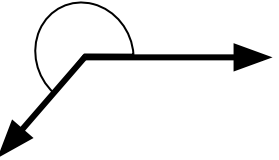
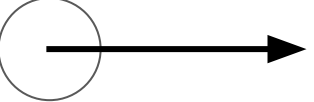
How many different angles do you see in this picture?
Use colours to identify each type of angle and then measure them.



How many different angles do you see in this picture?
Use colours to identify each type of angle and then measure them.

Angle Cards

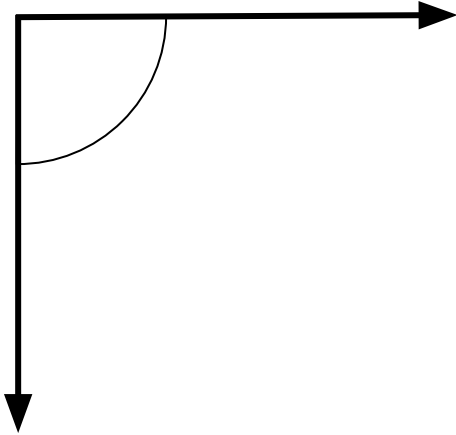
Acute Angle	Right Angle
	
Less than 90°	90°
Obtuse Angle	Straight Angle
	
Between 90° and 180°	180°
Reflex Angle	Full Rotation
	
Between 180° and 360°	360°

Acute Angle	Right Angle
	
Less than 90°	90°
Obtuse Angle	Straight Angle
	
Between 90° and 180°	180°
Reflex Angle	Full Rotation
	
Between 180° and 360°	360°

Angle Answers

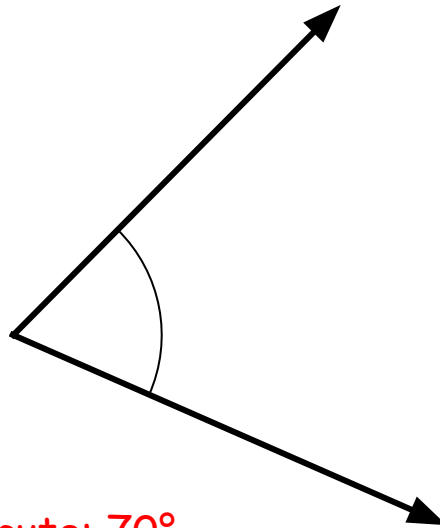
*Answers could be within 5 degrees of the measurement shown

Angle A



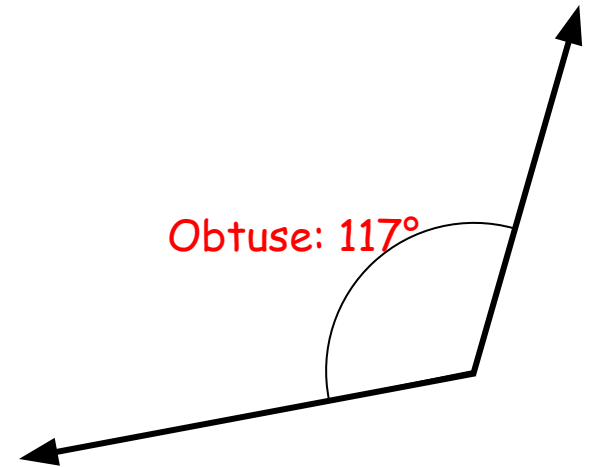
Right: 90°

Angle B



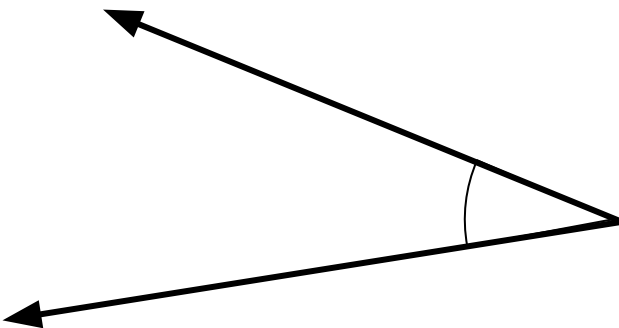
Acute: 70°

Angle C



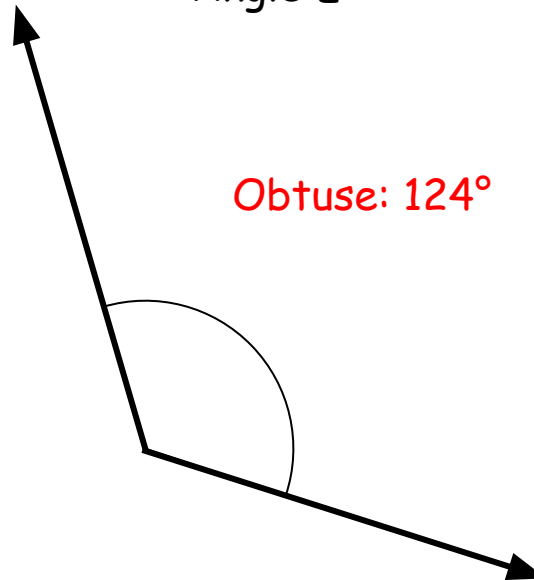
Obtuse: 117°

Angle D



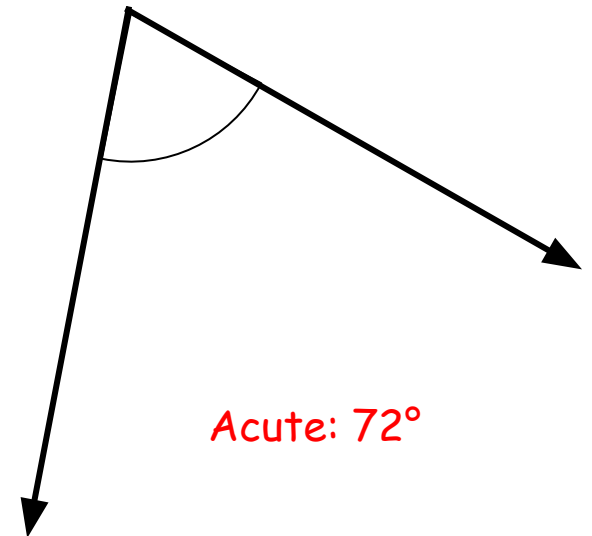
Acute: 30°

Angle E



Obtuse: 124°

Angle F

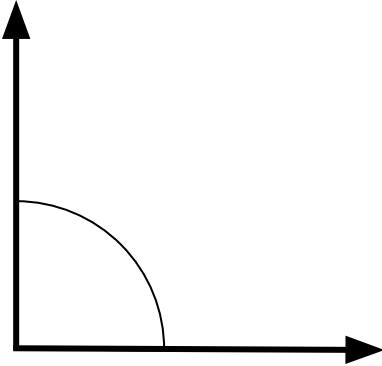


Acute: 72°

Angle Answers

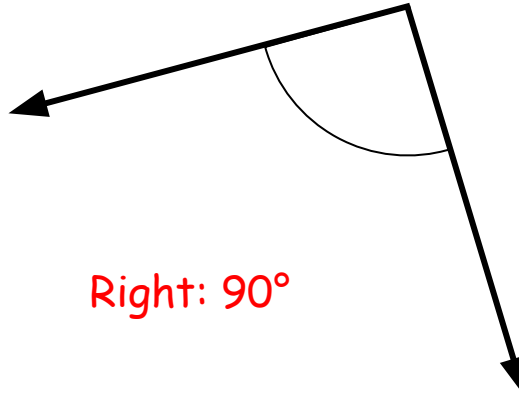
*Answers could be within 5 degrees of the measurement shown

Angle G



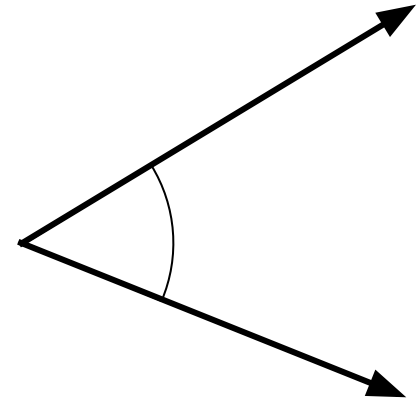
Right: 90°

Angle H



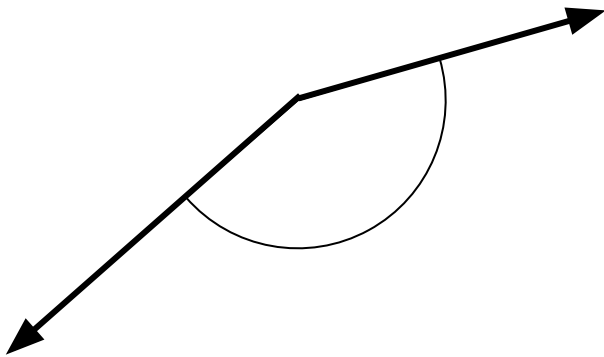
Right: 90°

Angle I



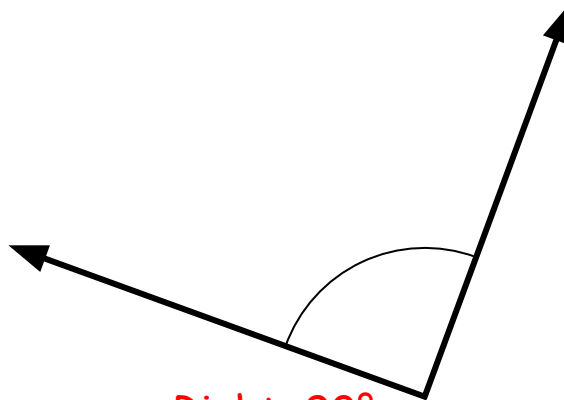
Acute: 53°

Angle J



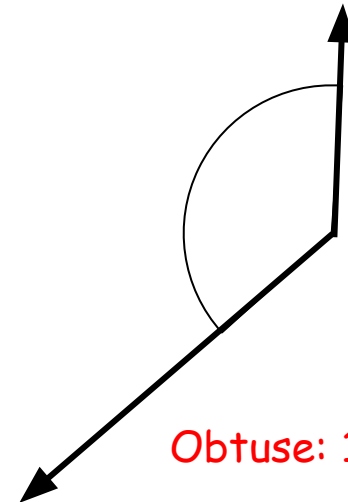
Obtuse: 153°

Angle K



Right: 90°

Angle L



Obtuse: 132°