

Welcome back - we hope you've all had a nice Christmas break! This half-term will be very busy and exciting with many things to look forward to.

**PE days: Monday (gymnastics) and Wednesday (basketball)**

### Geography

In geography we will be answering the question 'would you like to live in a desert?' We will be focusing on the Mojave Desert as a case study and learning about the climate, vegetation, animal life, landscape and location.

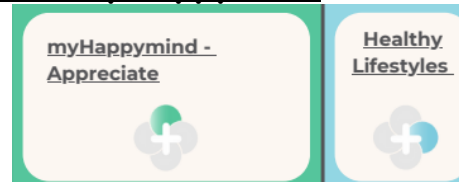
### Mathematics

Fractions will be the focus for the first few weeks back. We will be comparing and ordering fractions (less and greater than 1) as well as finding equivalent fractions, converting between improper and mixed numbers, adding and subtracting fractions with different denominators.

Confidently, recalling multiplication and division facts will really help during this unit.

We will then move onto our second multiplication and division unit during which we will use written methods for multiplication (long and short) and division (short). Using these written methods, the children will solve one and two-step word problems; explaining their reasoning.

### PSHE - MyHappyMind



### RE

Key Question: U2.4: If God is everywhere, why go to a place of worship? This investigation enables pupils to learn in depth from different religious and spiritual ways of life about worship, drawing out more detail, history and diversity through focussing on places of worship. Pupils learn about the various purposes of a place of worship as well as how believers see these places.

### Art

In art, we are doing an artist study on Alberto Giacometti. We will be focusing on his famous work, 'The Walking Man', and learning about his signature style. At the end of the unit, we will create our own clay sculptures of people, with a focus on movement.

### ICT

Programming A - Selection in physical computing.  
In this unit, learners will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment.

### Science

Pupils will develop a secure understanding of the Solar System and related phenomena. They will be able to explain the geocentric and heliocentric models, describe the shapes and orbits of celestial bodies, and identify gravity as the force maintaining these orbits. Learners will understand the Moon's orbit and phases, as well as how day, night, and seasons occur. They will explore how sundials work, the uses of satellites, and the challenges posed by space debris. Working scientifically, pupils will pose testable questions, use models to represent the Solar System, design tables for data collection, and create accurate diagrams of day/night and seasonal changes. They will calibrate and use sundials, analyse temperature patterns, and make predictions based on data.

# Fractions

# Knowledge Organiser

## Key Vocabulary

numerator

denominator

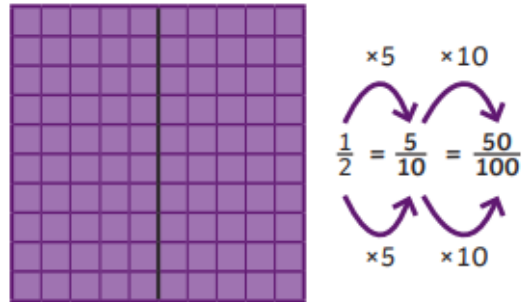
unit fraction

non-unit fraction

whole

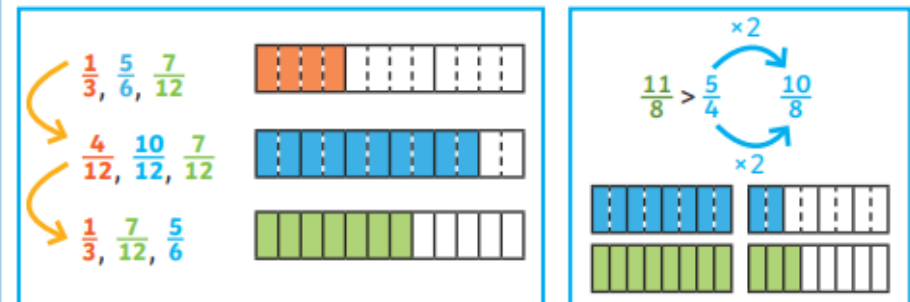
## Equivalent Fractions

To find equivalent fractions, we multiply or divide the numerator and denominator by the same number.



## Compare and Order Fractions

We can compare and order fractions by using common denominators.



equivalent

## Mixed Numbers

mixed number

Mixed numbers contain a whole number and a fraction.



## Improper Fractions

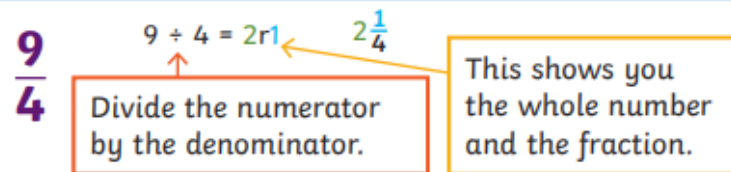
An improper fraction has a numerator which is greater than or equal to the denominator.

$\frac{5}{3}$

improper fraction

## Convert an Improper Fraction to a Mixed Number

simplest form



multiple

## Convert a Mixed Number to an Improper Fraction

Multiply the whole by the denominator to make an improper fraction.

$$2\frac{5}{6} = \frac{12}{6} + \frac{5}{6} = \frac{17}{6}$$

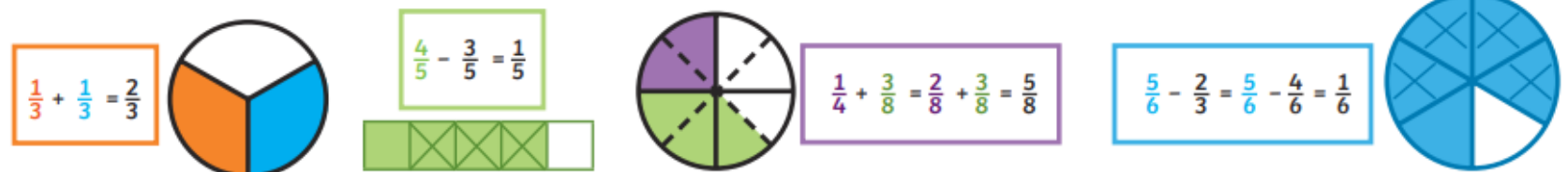
Add the fractions together.

common denominator

## Adding and Subtracting Fractions

common numerator

To add or subtract fractions with denominators that are multiples of the same number, we must change one fraction to have the same denominator.



## Multiplication and Division

## Knowledge Organiser

### Short Multiplication

$$2543 \times 7 = 17801$$

	2	5	4	3
×				7
<b>1</b>	<b>7</b>	<b>8</b>	<b>0</b>	<b>1</b>
1	3	3	2	

Remember to move any regrouped digits into the next column. After the next multiplication, add the regrouped number to the answer.

### Long Multiplication

$$2543 \times 67 = 170381$$

		2	5	4	3	
	×			6	7	
		1	7	8	0	1
1	5	2	5	8	0	
1	3	2	1			
<b>1</b>	<b>7</b>	<b>0</b>	<b>3</b>	<b>8</b>	<b>1</b>	
1	1					

Before multiplying by the number in the tens column, remember to use zero as a placeholder because the 6 in 67 is 6 tens (60).

### Division

$$136 \div 4 = 34$$

		<b>3</b>	<b>4</b>	
4		1	3	6
-		1	2	0
			1	6
		-	1	6
				0

→  $30 \times 4$

→  $4 \times 4$

### Short Division

		<b>3</b>	<b>8</b>	
4		1	<sup>1</sup> 5	<sup>3</sup> 2

$$15 \div 4 = 3 \text{ remainder } 3$$

Remember to regroup any remainders and move them into the next column.

		<b>4</b>	<b>5</b>	<b>5</b>	<b>r</b>	<b>3</b>
5		2	2	<sup>2</sup> 7	<sup>2</sup> 8	

$$28 \div 5 = 5 \text{ remainder } 3$$

If your calculation has a remainder, remember to record it in the answer using the letter **r**.

Multiplication and Division		Knowledge Organiser
<b>Key Vocabulary</b>	<b>Factors</b>	<b>Prime Numbers</b>
multiply	A factor is a number that divides into another number exactly, without leaving a remainder.	
groups of		
lots of	<div style="border: 1px solid black; padding: 5px; background-color: #f9cb9c;"> <p>A common factor is a factor of 2 or more numbers.</p> </div>	
times	<div style="border: 1px solid black; padding: 5px; background-color: #f9cb9c;"> <p>The factors of 20 are 1, 2, 4, 5, 10 and 20.</p> <p>The factor pairs are:            1 and 20            2 and 10            4 and 5</p> </div>	
divide		
share		
remainder		
factor	<b>Squared<sup>2</sup> and Cubed<sup>3</sup> Numbers</b>	
multiple		<div style="background-color: #fff9c4; padding: 10px;"> <math>8 \times 9 = 72</math>  <math>80 \times 9 = 720</math> </div> <div style="background-color: #cfe2f3; padding: 10px;"> <math>9 \times 8 = 72</math>  <math>90 \times 8 = 720</math> </div>
product		<div style="background-color: #c6e0b4; padding: 10px;"> <math>72 \div 9 = 8</math>  <math>720 \div 9 = 80</math> </div> <div style="background-color: #f4cccc; padding: 10px;"> <math>72 \div 8 = 9</math>  <math>720 \div 8 = 90</math> </div>
visit <a href="https://www.twinkl.com">twinkl.com</a>		

The Solar System is a group of celestial bodies, including the Sun, planets, asteroids and moons, held together by gravity.

The Sun, Earth, moons and other planets are spherical in shape.

Ptolemy



100-170 CE

Alhazen



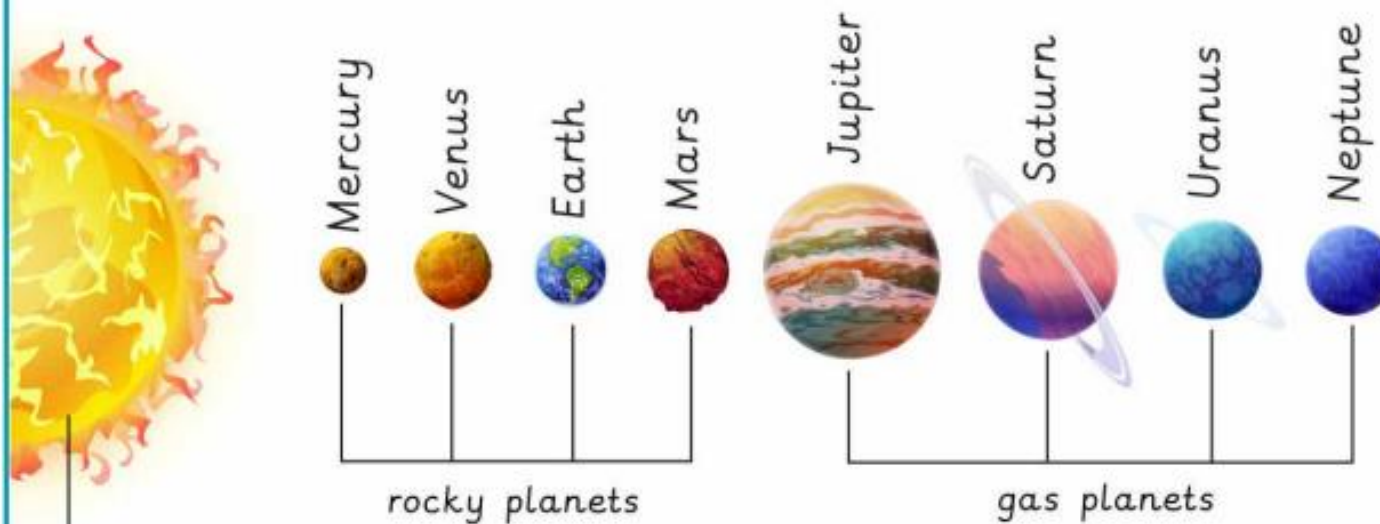
965-1040 CE

Copernicus



1473-1543 CE

## Our Solar System



Sun - a star at the centre of our Solar System

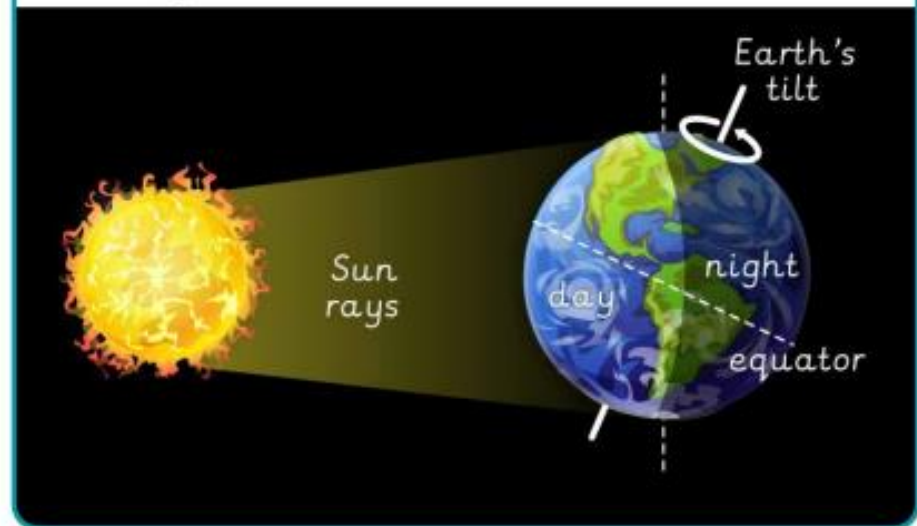
The heliocentric model was developed by Copernicus (1473-1543 CE) and theorised that the Sun was at the centre of the Solar System with the Earth and other planets orbiting around it.

The geocentric model was developed by Ptolemy (100-170 CE) and theorised that the Earth was at the centre of the Solar System with the Sun and other planets orbiting around it.



Artificial satellites are human-made objects that orbit planets. They have many uses, including gathering data, communications and taking images.

Day and night: the Earth rotates on its axis every 24 hours, creating periods of daylight and nighttime.



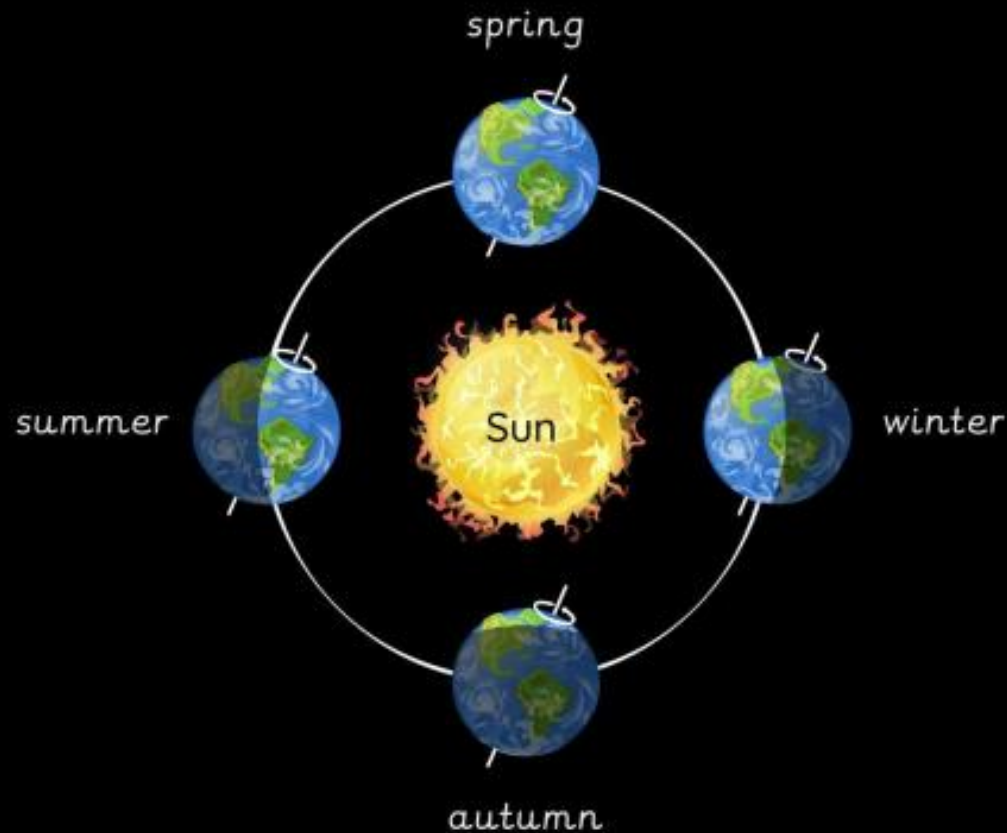
Phases of the Moon: the Moon appears to change shape as it orbits the Earth because we see different amounts of its lit-up side (the side reflecting light from the Sun).

lunar month:  
27.5 days



Moons, also called natural satellites, are celestial bodies that orbit planets. The Earth has one moon. Some planets, like Mercury, have no moons and other planets, like Saturn, have many moons (the current count is 146).

## The Earth's seasons



The Earth orbits the Sun once every 365.25 days (one year). When the Northern Hemisphere is tilted towards the Sun, it receives more light for longer so it is summer. When it is tilted away from the Sun, it is winter in the Northern Hemisphere.

## Would you like to live in the desert?

<b>arid</b>	Too little rain to support lots of vegetation.
<b>barren</b>	Land that cannot grow vegetation.
<b>biome</b>	An area of the world with a similar climate and landscape, where similar plants and animals live.
<b>climate</b>	Long-term weather conditions in a specific region.
<b>desert</b>	Any stretch of land with little to no rainfall and extremely sparse vegetation and wildlife.
<b>mining</b>	The process of digging up valuable minerals from the Earth's crust.
<b>rainfall</b>	The amount of rain falling in a place over a particular time.
<b>ranching</b>	Keeping animals on a large farm, particularly in the Americas.
<b>renewable energy</b>	Energy generated from a continuous source, such as wind or water.

### Physical features in the Mojave Desert:



sand dune



natural arch



mushroom  
rock



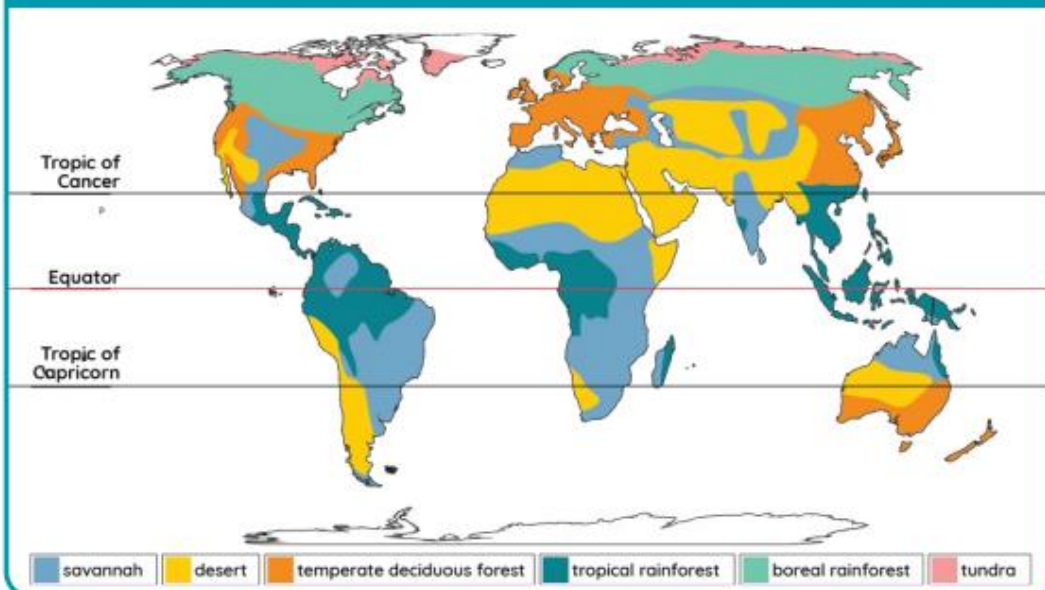
mesa



salt flat

## Would you like to live in the desert?

### Where are hot desert biomes located?



A hot desert biome is hot, dry and arid, although temperatures can drop at night and occasional heavy downpours can occur.

### Threats and dangers:



**drought**



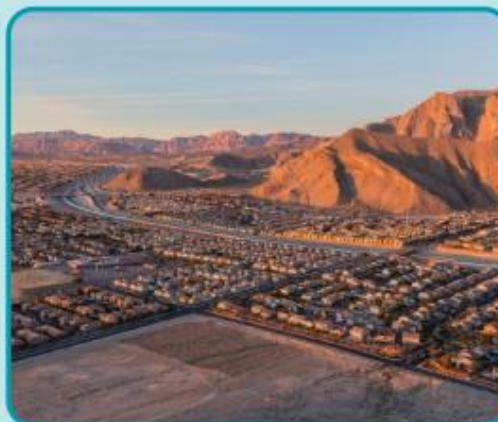
**desertification**



**flash floods**

### How do people use the Mojave Desert?

- Protecting areas of natural beauty in national parks.
- Recreational purposes like hiking or quad biking.
- Ranching and farming.
- Military bases and training.
- Mining precious minerals.
- Generating renewable energy.
- Living in settlements.



Art planning: Year 5

Unit two: Movement- Giacometti

Step	Knowledge and skills	Vocabulary
<b>1. Artist study</b> A: approaches I: inspiration for own work M: meaning S: skills and techniques	<ul style="list-style-type: none"> <li>• Introduction to Alberto Giacometti, basic facts.</li> <li>• Watch the TATE video about him and his style.</li> <li>• Discuss his artistic style, inspirations, the Surrealist/Formalist movements.</li> <li>• Discuss this term's key focus: movement, and how his figures were inspired by hurrying people in big cities.</li> <li>• Introduce the children to 'the Walking Man'.</li> <li>• Create a poster about Giacometti and what he was known for.</li> </ul>	<ul style="list-style-type: none"> <li>- Form</li> <li>- Movement</li> <li>- Sculpture</li> <li>- Formalist</li> <li>- Surrealist</li> </ul>
<b>2. Skills development</b>	<ul style="list-style-type: none"> <li>• To experiment in the style of Alberto Giacometti.</li> <li>• What do you notice about this figure made by Giacometti? Brainstorm as a class.</li> <li>• Recap what you learnt about Giacometti's style last lesson.</li> <li>• In sketchbooks, children will stick in a 'normal' figure of an animal, person etc.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Then, on the left hand side of their books, they will sketch in the style of Giacometti by elongating the limbs and removing all defining features.</li> <li>• Extension: children can come up with their own.</li> </ul>	
<b>3. Idea generation:</b> gathering ideas and images	<ul style="list-style-type: none"> <li>• Children will use the inspiration images to practise sculpting in the style of Giacometti using plasticine (easier than clay).</li> <li>• Develop ideas.</li> </ul>	
<b>4. Application of skills:</b> ideas towards the final piece	<ul style="list-style-type: none"> <li>• To recreate a piece by Giacometti (the Walking Man).</li> <li>• Draw a stick man on a piece of A4 paper. Use a piece of wire to create an armature frame.</li> <li>• Bend the wire frame to resemble the 'Walking Man'.</li> <li>• Add clay to the frame (not too much, so it still has the long, skinny 'look' of Giacometti's work).</li> </ul>	
<b>5: Make and evaluate final piece.</b>	<ul style="list-style-type: none"> <li>• To create a sculpture in the style of Giacometti.</li> <li>• Remind the children that we are focusing on 'movement'.</li> <li>• Sketch a figure doing a different activity (other than walking), e.g., playing basketball.</li> <li>• Following a similar process to last lesson, make a wire armature frame, bend into the shape of your sketch and add the clay. Leave to dry.</li> </ul>	

## Year 5 RE Knowledge Organiser

### If God is everywhere, why go to a place of worship?

Word	Definition
Worship	The act of showing reverence and adoration for a deity.
Church	A building where Christians gather to worship God.
Mandir	A Hindu temple; a place where Hindus worship and offer prayers to their gods.
Synagogue	A Jewish place of worship, where Jews gather for prayer, study, and community activities.
Belief	An acceptance that something exists or is true, especially without proof.
Ritual	A ceremonial act often performed in accordance with religious customs or traditions.
Community	A group of people living in the same place or having something in common, often strengthened through shared beliefs and practices.
Tradition	A custom or belief that has been passed down through generations.



### Key learning

1. Explore the questions: What is a place of worship and what is it for? Recap previous learning.
2. Explain the role of worship in Anglican and Baptist churches.
3. Explore how Christians shape their place of worship.
4. Explain the role of worship in Hindu mandirs.
5. Compare and contrast worship in the home versus in places of worship within Hinduism
6. Explore the role of worship in a Jewish synagogue.
7. Discuss the unique aspects of Jewish synagogues and their significance in the Jewish faith.
8. Identify and describe the key features of different places of worship, linking them to their respective religious beliefs.
9. Articulate what places of worship mean to believers and how they provide support during difficult times.
10. Understand that for some individuals, the essence of worship lies more in community and connection rather than the physical building itself.