**Words 1**

Read and match.

|  |
| --- |
| make a copy inside beautiful make longer has sides of the same length  endless exactly the same has the same shape |

|  |  |
| --- | --- |
| 1. symmetrical |  |
| 2. identical |  |
| 3. equilateral |  |
| 4. internal |  |
| 5. infinite |  |
| 6. extend |  |
| 7. reproduce |  |
| 8. aesthetic |  |

**Words 2**

Complete the sentences.

|  |
| --- |
| constituent dimensions hesitate arrangement practical  interlocking symmetrical repetition employ approximately |

1.  Salt crystals have a \_\_\_\_\_\_\_\_\_ structure.

2.  Artists sometimes \_\_\_\_\_\_\_\_\_ symmetry to create beautiful patterns.

3.  The left and right sides of our face are \_\_\_\_\_\_\_\_\_ symmetrical.

4.  Please don’t \_\_\_\_\_\_\_\_\_ to ask me if you need any help.

5.  Sodium is the main \_\_\_\_\_\_\_\_\_ of salt.

6.  Symmetry has many \_\_\_\_\_\_\_\_\_ applications in materials design.

7.  A honeycomb is made up of \_\_\_\_\_\_\_\_\_ hexagons.

8.  The \_\_\_\_\_\_\_\_\_ of elements in a sugar crystal is symmetrical.

9.  The \_\_\_\_\_\_\_\_\_ of a single shape creates a pattern with translational symmetry.

10.  The three \_\_\_\_\_\_\_\_\_ of a room are its length, height, and width.

**Read 1**

Read and choose.

|  |
| --- |
| Trees, leaves, and flowers often show symmetrical patterns. If you hold a leaf up to the light, you will see the fine lines inside it which carry nutrients around the tree. These show reflectional symmetry – the lines on both sides of the center line are the same. As well as this, if you draw around the outside edge of the leaf and then look at what you have drawn, you’ll see that the outside edge has a symmetrical pattern when it is divided in half.  Many plants and flowers show a special kind of symmetry called rotational symmetry. If you look at a daisy or a lily, for instance, and imagine rotating it around its center, the pattern would be repeated – like a snowflake, it has both reflectional and rotational symmetry. The same applies to an apple or an orange cut through the center – this will reveal a symmetrical pattern. Of course, in the natural world, this symmetry is usually approximate. In art, patterns can be created which are perfectly symmetrical, whereas in the natural world, it may not be so exact.  However, this symmetry serves an important purpose and is more than just decorative. Just as engineers and architects use symmetry to make strong, elegant buildings, having the best arrangement of leaves can ensure that the plants get the most exposure to sunlight and the best chance of future survival. The head of a sunflower, for instance, is a large circle with rotational symmetry. This gives plenty of space for insects to land on top and help pollinate the flowers. A type of plant called a bee orchid has evolved to develop a symmetrical pattern which attracts a certain kind of bee.  Symmetry is more than just a pattern. It is a natural balance which enables plants and flowers to live and grow. |

1. The text describes symmetry in trees, flowers, and leaves.
   * True
   * False
2. It describes the symmetry of a tree.
   * True
   * False
3. It mentions three kinds of symmetry.
   * True
   * False
4. It says that symmetry in nature is usually perfect.
   * True
   * False
5. It explains why symmetry is important for flowers.
   * True
   * False
6. It says that symmetry is both beautiful and useful.
   * True
   * False

**Read 2**

Read and match.

|  |
| --- |
| Trees, leaves, and flowers often show symmetrical patterns. If you hold a leaf up to the light, you will see the fine lines inside it which carry nutrients around the tree. These show reflectional symmetry – the lines on both sides of the center line are the same. As well as this, if you draw around the outside edge of the leaf and then look at what you have drawn, you’ll see that the outside edge has a symmetrical pattern when it is divided in half.  Many plants and flowers show a special kind of symmetry called rotational symmetry. If you look at a daisy or a lily, for instance, and imagine rotating it around its center, the pattern would be repeated – like a snowflake, it has both reflectional and rotational symmetry. The same applies to an apple or an orange cut through the center – this will reveal a symmetrical pattern. Of course, in the natural world, this symmetry is usually approximate. In art, patterns can be created which are perfectly symmetrical, whereas in the natural world, it may not be so exact.  However, this symmetry serves an important purpose and is more than just decorative. Just as engineers and architects use symmetry to make strong, elegant buildings, having the best arrangement of leaves can ensure that the plants get the most exposure to sunlight and the best chance of future survival. The head of a sunflower, for instance, is a large circle with rotational symmetry. This gives plenty of space for insects to land on top and help pollinate the flowers. A type of plant called a bee orchid has evolved to develop a symmetrical pattern which attracts a certain kind of bee.  Symmetry is more than just a pattern. It is a natural balance which enables plants and flowers to live and grow. |

|  |
| --- |
| something that helps things grow attractive show a type of flower  perfect turn around |

|  |  |
| --- | --- |
| 1. nutrients |  |
| 2. rotate |  |
| 3. daisy |  |
| 4. reveal |  |
| 5. elegant |  |
| 6. exact |  |

**Read 3**

Read and choose.

|  |
| --- |
| Trees, leaves, and flowers often show symmetrical patterns. If you hold a leaf up to the light, you will see the fine lines inside it which carry nutrients around the tree. These show reflectional symmetry – the lines on both sides of the center line are the same. As well as this, if you draw around the outside edge of the leaf and then look at what you have drawn, you’ll see that the outside edge has a symmetrical pattern when it is divided in half.  Many plants and flowers show a special kind of symmetry called rotational symmetry. If you look at a daisy or a lily, for instance, and imagine rotating it around its center, the pattern would be repeated – like a snowflake, it has both reflectional and rotational symmetry. The same applies to an apple or an orange cut through the center – this will reveal a symmetrical pattern. Of course, in the natural world, this symmetry is usually approximate. In art, patterns can be created which are perfectly symmetrical, whereas in the natural world, it may not be so exact.  However, this symmetry serves an important purpose and is more than just decorative. Just as engineers and architects use symmetry to make strong, elegant buildings, having the best arrangement of leaves can ensure that the plants get the most exposure to sunlight and the best chance of future survival. The head of a sunflower, for instance, is a large circle with rotational symmetry. This gives plenty of space for insects to land on top and help pollinate the flowers. A type of plant called a bee orchid has evolved to develop a symmetrical pattern which attracts a certain kind of bee.  Symmetry is more than just a pattern. It is a natural balance which enables plants and flowers to live and grow. |

1.  The text mentions symmetry in trees, leaves, flowers, and insects / fruit.

2.  A leaf shows an example of reflectional / rotational symmetry.

3.  A daisy and an apple have different / similar kinds of symmetry.

4.  In art, it is possible / not possible to create perfect symmetry.

5.  The bee orchid is a type of flower / insect .

**Grammar in Use 1**

Read and match.

|  |
| --- |
| who study stars and space.  that has symmetrical wings.  who look exactly the same.  that has three sides.  that helps us to see distant objects.  where scientists develop new materials. |

|  |  |
| --- | --- |
| 1. A butterfly is an insect |  |
| 2. A triangle is a shape |  |
| 3. Identical twins are two people |  |
| 4. A telescope is a tool |  |
| 5. Astronomers are scientists |  |
| 6. This is the factory |  |

**Grammar in Use 2**

Correct the errors. Select the incorrect text, and type.

**1.** A museum is a place that you can see historical objects.   
**2.** A pinwheel is an object who has rotational symmetry.   
**3.** A zebra is an animal what  has black and white stripes.   
**4.** Sugar and salt are substances they have a symmetrical structure.   
**5.** Tall buildings and bridges are structures where employ symmetry.

**Grammar in Use 3**

Read and choose.

1.  A library is a place where / which  you can borrow books.

2.  An astronaut is a person who / where travels into space.

3.  A microphone is a device who / which  records your voice.

4.  M.C. Escher was an artist who / where used symmetry to create visual patterns.

5.  A circle and a square are shapes that / where  have reflectional symmetry.

**Grammar in Use 4**

Rearrange the words to make sentences.

|  |
| --- |
| an insect that a spider is eight legs has |

1. \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ .

|  |
| --- |
| flies who a pilot a plane a person is |

2. \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ .

|  |
| --- |
| a kettle is water that boils a device |

3. \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ .

|  |
| --- |
| you prepare a kitchen a place food is where |

4. \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ .

|  |
| --- |
| meat is a crocodile a reptile that eats |

5. \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ .

**Listening**

Listen, read, and complete.

|  |  |
| --- | --- |
| furniture wood slide shelves trained |  |

1.  Joey’s uncle makes tables, chairs, beds, and \_\_\_\_\_\_\_\_\_\_ .

2.  You need to choose the \_\_\_\_\_\_\_\_\_\_ carefully.

3.  If a table isn’t symmetrical, your dishes will \_\_\_\_\_\_\_\_\_\_ off.

4.  He \_\_\_\_\_\_\_\_\_\_ as a carpenter for many years.

5.  He has made a lot of \_\_\_\_\_\_\_\_\_\_ .

**Speaking**

Listen, record Part A or B, then check.

|  |  |
| --- | --- |
| A:Look! These pictures are identical.  B:I don’t know the word “identical.” How do you spell it?  A:Like this, I D E N T I C A L. It’s an adjective.  B:Could you give me another example?  A:Sure. These pictures are exactly the same. They’re identical.  B:Oh, I understand now. Thanks! |  |

**Word Study**

Read and choose.

1.  Can you inter / trans late this e-mail from English into Spanish?

2.  In the past, people had to make inter / trans atlantic journeys by ship.

3.  There was a 10-minute inter / trans mission in the middle of the concert.

4.  Turn right at the next inter / trans section and you will see the park.

5.  Bus and train are two types of public inter / trans portation.

6.  The wallpaper had a design of inter / trans locking circles.

**Writing Study**

Replace the numbers with words.

**1.** We’re going to watch a 2 -part documentary about pandas.  
**2.** This book has 95 illustrations of animals and birds.   
**3.** There are 8 windows in this room.  
**4.** 27 students are going on the trip to France.  
**5.** It is a 3 -hour walk to the top of the hill.