**Unit 1 Broken Chopstick**

**Listen to the audio and fill in the blanks. Track 03**

A car is driving along the (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. What happens if it drives (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ someone’s lawn?

The (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the car changes. The road and the lawn are made of (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ things. The car turns, too.

What about (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? It’s the same for light.

Light passes through many materials. They change its speed.

Water is (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than air. Because of this, light slows down when it enters water. It refracts the light. The light changes (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

When we look at an object inside water, it looks different. Light refraction changes how it looks.

Step 1. Prepare a (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cup and a chopstick.

Step 2. Put the chopstick into the (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cup. You can see the straight chopstick.

Step 3. Now, (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the cup with water and put in the chopstick. What does it look like now?

Did the chopstick look (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when it was inside the water?

No, it didn’t. It looked bent. It looked like the chopstick was (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The chopstick in the water also looked slightly (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Why is this? Light changed direction when it entered the water. When the light reflected from the chopstick (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ our eyes, it looked like the chopstick was in a different position. Refracted light is focused. It makes things look bigger. So the (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ looked wider, too.

**Unit 2 Tall Boy, Short Legs**

**Listen to the audio and fill in the blanks. Track 06**

Rick was the (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ boy in the entire school. He had really long arms and legs.

One hot (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Rick, Ted, and Amy went to the swimming pool. Rick dove into the water. He was so (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when he saw his legs!

“Look! My legs look so (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and wide! What happened to my legs?” he (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

“Ha ha, you look so funny!” said Ted.

Amy said, “It’s because of light refraction. Light goes into the water and slows down. It changes (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.”

“Why does that make my legs look (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?”

“The light from the sun (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ off your legs in the water. Our brain only sees light as a (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ line. It doesn’t know the light has been refracted. So your legs look (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and strange. They look shorter than they really are...”

Amy wanted to keep talking, but Rick (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ her into the pool.

“I can’t be the only one with short legs. Come in, (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!”

**Unit 3 Pressure Changes, Volume Changes**

**Listen to the audio and fill in the blanks. Track 09**

(1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the amount of force air makes on a certain area.

Can pressure change the (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of things? If we apply pressure to water, will its volume change? What about the volume of a gas?

Yes, pressure (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the volume of a gas.

When you apply (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pressure to a gas, the volume gets a little (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. And when you apply high pressure to it, it gets a lot smaller.

Let’s (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it happen.

Step 1. Put 40 ml of water in a syringe (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a needle. Cover the end with your finger.

Step 2. Press the plunger lightly and (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the changes. Then press the plunger hard.

Step 3. Now, put 40 ml of air in the syringe. Cover the end with your (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Step 4. Repeat step 2 with air (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of water. Observe the changes based on the pressure you put on the plunger.

What happened? The volume of water in the syringe didn’t change. No matter the pressure you put on it, it (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at 40 ml.

What about when you put air in the syringe? Did the volume stay the same?

It didn’t. When you pressed the plunger lightly, the volume got a little smaller. It was (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than 40 ml.

When you pressed the plunger (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the volume of the air got a lot smaller. The harder you pressed the plunger, the smaller the volume of the (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ got.

Now you know that pressure can (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ change the volume of a gas.

**Unit 4 A Bag of Chips**

**Listen to the audio and fill in the blanks. Track 12**

Irene went (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with her family. She packed a bag of her (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ chips in case she got hungry.

Irene was so proud when she (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the top of the mountain! She sat down for a (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and took out her bag of chips.

She was very (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! The bag was swollen. It looked like it was about to burst.

Irene (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it to her mom.

“Mom, look, the bag of chips is inflated. It looks like it’s (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bad!”

Mom answered, “It’s the air (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ here that makes the bag inflate. The air pressure gets lower as you go up the (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Do you notice how it’s harder to breathe up here? That’s (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the low air pressure. When air pressure (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the bag lowers, air volume inside it (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is why it inflates.”

Irene (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at her mom. She had a suspicious look on her face.

“So, these chips are (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to eat?”

“Of course they are! Can I have (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ chips?” said Mom.

**Unit 5 Two Different Lenses**

**Listen to the audio and fill in the blanks. Track 15**

We use a lens to bend and (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ light. Lenses can be convex or concave. Convex lenses are thick in the (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and thin at the edges. Concave lenses, on the other hand, are thick at the (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and thin in the middle.

Let’s take a closer (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at convex lenses.

Convex lenses are mostly (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are made of glass or transparent plastic.

Let’s watch how light goes (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a convex lens.

Step 1. Prepare a convex lens and a laser pointer.

Step 2. Point the laser at the edge of the lens. You’ll see the laser beam curve (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the middle.

Step 3. Now, point the laser at the middle of the lens. The laser beam doesn’t (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but goes (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through.

The laser beam bent toward the middle as it (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through the edge of the lens. It was refracted.

The laser beam went straight through the middle of the lens. It didn’t bend.

When a light beam (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through a convex lens, it is refracted just like the laser beam.

All light beams that (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the edge of a convex lens are refracted to the middle. Light is focused at one (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This focused light makes things look (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Sunlight, a type of light, can also be refracted through a convex lens.

What happens when it is focused in one (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

**Unit 6 Telescopes, Microscopes, and More!**

**Listen to the audio and fill in the blanks. Track 18**

Fran went on a (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trip to the observatory. She learned about stars and (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. She saw (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from space. She saw many cool telescopes there, too.

Fran was very (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. “Wow, it’s my first time seeing a real telescope! It’s so big!”

“These are Keplerian telescopes,” explained the teacher.

“How do they (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?” asked Fran.

“Well, they use two (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A convex lens gathers and (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ light from far away. It makes (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ things look bigger or closer. We can see (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and planets in more detail. Then a concave lens takes this light, and it (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into your eye.”

“Teacher,” said Fran, “(11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ use convex and concave lenses, too, right?”

“That’s right,” the teacher (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. “Cameras use convex and concave lenses. Binoculars use them, too. Convex lenses (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ us see far away and make small things look bigger and closer. This is why microscopes (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ convex lenses. Concave lenses spread the light and give us a (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ image.”

**Unit 7 The Flow of Electricity**

**Listen to the audio and fill in the blanks. Track 21**

How does electricity (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? First, it needs an electrical circuit. The electricity flowing through the circuit is (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an electric current.

Can we make a circuit to turn on a light (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? Prepare a battery, wires, and a light bulb. Let’s make two (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ circuits.

Step 1. Get two wires. (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ one end of each wire to each pole of the (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (+/-).

Step 2. Connect the other (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the wires to the light bulb. What happens?

Step 3. (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ two wires. Connect one end of two wires to one (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the battery.

Step 4. Connect the (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ends of the wires to the bulb. What happens?

When did the bulb (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ up? It only turned on in Circuit 1.

Why do you think that was?

An electrical circuit needs (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ things.

1. The battery, wires, and bulb should all be connected.

2. The electrical conductors should be connected to (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ poles of the battery.

3. The light bulb should be connected to both conductors.

In Circuit 2, only one pole of the battery was connected.

The bulb didn’t turn on because the electrical circuit wasn’t complete. The electricity (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ flow.

Take the battery, wires, and light bulb again. What other circuits could you (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with them?

**Unit 8 All of the Lights**

**Listen to the audio and fill in the blanks. Track 24**

Liam and his dad were getting ready for New Year’s Day. They were going to have a (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Liam was putting up a string of lights.

“Dad, these lights are too (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Can I cut the wire in (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? Then I can add some thread to make the lights (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.”

“No,” said Dad. “You (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to connect the bulbs to conductors. (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ they won’t light up. They’re joined with (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ wires which conduct electricity. Thread isn’t a conductor, so the lights won’t light up.”

“Okay, Dad. Is there (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ else I need to know?”

“You should check (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the wires are connected to both poles of the (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They should be connected to the positive and negative (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Otherwise the circuit won’t be (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.”

“The wires go into a battery (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. I’m sure they’re (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ connected to both poles. I’m going to turn them on!”

“Wow, Liam! These lights look (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Let’s show Mom!”

**Unit 9 More Batteries**

**Listen to the audio and fill in the blanks. Track 27**

We made an (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ circuit with just one battery. We can use two or more batteries, too.

You can connect the opposite poles of each battery. That’s called a “series connection.”

You can connect the same poles of each battery. That’s called a “parallel connection.”

Let’s make (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ types of electrical circuits.

Step 1. Connect the (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (+) pole of one battery to the (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (-) pole of the other battery. (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ wires to the remaining positive and negative poles. Connect both wires to a light bulb.

Step 2. Connect the positive and negative poles of two batteries (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Connect wires to each pole of one of the (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Connect to the light bulb.

Step 3. (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the brightness of the bulb in each connection.

Which circuit was series? Which was parallel?

Circuit 1 was a series (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Circuit 2 was a parallel connection.

Which was (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? The bulb with the series connection was brighter than the one with the parallel connection.

Why is that? Series connections (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ battery voltage. They make the batteries (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Parallel connections aren’t as strong. But they make the batteries (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ longer.

Which do you think is better?

Do you know any (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ways to make a series or parallel (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

**Unit 10 Electricity Everywhere**

**Listen to the audio and fill in the blanks. Track 30**

Sophia was at home (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TV. She had the lights on. The electric heater was also running. The TV was (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, so she turned on the (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as well.

Her phone battery was (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. She plugged her phone and the TV into the same outlet.

Then she looked (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It was snowing!

She called her brother James. They went outside to play in the (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They threw snowballs and made a (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Sophia started getting cold. She went back inside to make some hot (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The snow on her (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ melted and made her hands wet. She was about to plug in the (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when...

“(11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!” Her mom was just back from the grocery store.

“Sophia, don’t touch electrical things with wet hands. It’s very (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.”

“Oh! Sorry, Mom.”

“And look! You didn’t (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ off any of the electrical things. You plugged the TV and your phone, which are electronics, into the (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ outlet.”

“Is that (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?”

“Yes, it is. The plug could overheat. It could start a fire.”

**Unit 11 Sea Breeze and Land Breeze**

**Listen to the audio and fill in the blanks. Track 33**

Have you ever felt the (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at the sea coast? It’s not (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the same.

In the daytime, a cool breeze (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the sea. We call it a sea breeze.

In the (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, a cool breeze blows as well. But now it blows from the land to the sea. This is a land breeze.

Why does this happen? Let’s see.

Step 1. (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ two lamps, a bowl filled with water, a bowl filled with sand, a (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ box, and an incense stick. Turn on the lamps and heat the sand and water for about 5 (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Step 2. Put the box over the heated sand and water. Put the (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ incense stick into the box.

Step 3. (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the movement of smoke for 30 seconds.

The smoke moved from the cool water to the (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ sand.

Why did this happen? The sand was warm, but the water was still cool.

Sand heats up more (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than water. The warm sand created a low air pressure (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The cool water created a high pressure area.

Air always moves from (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to low pressure. This movement is what we call wind.

In the daytime, the land heats up faster than the sea. The temperature of the land is higher. A sea breeze blows from the sea to the land.

At (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the land cools down faster than the sea. Now the (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the land is lower. A land breeze blows from the land to the sea.

**Unit 12 Flying a Kite**

**Listen to the audio and fill in the blanks. Track 36**

One (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ weekend, Daniel took a trip to the (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with his family.

He (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a kite with his dad.

“Dad, why is the kite flying (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ us? I thought it would fly above the sea.”

“Well, Daniel, the wind blows from the sea to the land in the (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.”

“Will the kite fly toward the land at night, (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?”

“Why don’t we check it out after (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dinner?”

They went out to the beach (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ after dinner. Daniel flew his kite again. Now it flew in the (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ direction.

“Dad, it’s flying toward the sea! Does the wind blow in the opposite (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at night?”

“Yes, because it’s cooler at night. Sand (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ down much faster than water. So the sand’s (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is lower than the water’s temperature at night.”

“Wind (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ blows from a cooler place to a warmer place, right?”

“Yep. Cool air creates higher air (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and warm air creates lower pressure. Wind is the flow of air as it (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from higher to lower pressure,” said Dad.

**Unit 13 The Height of the Sun**

**Listen to the audio and fill in the blanks. Track 39**

Have you ever (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ something about the sun?

In (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, it’s very high in the sky. On the other hand, in (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the sun is much lower.

The (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the sun differs from season to season.

The height of the sun in the sky affects the (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the day. It affects the temperature, too.

Let’s do an (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Step 1. Set a (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at a steep angle to a bowl of sand.

Step 2. Heat the sand using the lamp for 5 minutes. Then, (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the temperature.

Step 3. Now, set the lamp at a shallow angle to the sand.

Step 4. (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ again, heat the sand for 5 minutes and measure the temperature.

When was the temperature of the sand (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

It was higher when the lamp and the sand (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a steep angle. The lamp was at its highest.

This is what the sun is like in summer. The sun is high up in the sky.

When the sun is at its highest, it shines on a (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ area.

The heat (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in that area increases. The ground is (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ up. The temperature rises.

That’s why it is hot in summer when the sun is high. That’s why it is cold in winter when the sun is (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Unit 14 The Length of the Day**

**Listen to the audio and fill in the blanks. Track 42**

It’s too (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to play outside. Emily reads books at home (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

She reads by the (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through the window. She notices her (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is long.

It starts getting dark. (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can’t see her book well. She looks outside. The sun has (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ set!

She looks at the (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It’s only 5 p.m. How (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! In summer, it was so bright at 5 p.m.!

Emily (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the light. She looks for another book. She finds a science book. She (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ about solar altitude and the sun. Solar altitude (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during the day. It changes with the seasons as well.

She learns that Earth is at an angle. As it revolves (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the sun, we get closer and (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ away from the sun.

During the summer, solar altitude is at its maximum. The days are (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. During the winter, solar altitude is at its minimum. The days are (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Emily closes her book. She learns something today. And she can’t wait for summer to come again!

**Unit 15 Electricity from the Sun**

**Listen to the audio and fill in the blanks. Track 45**

We can’t imagine a world (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ electricity. We use it every day.

But (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of our electricity comes from (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ coal or gases. This creates (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It causes climate change. It’s bad for our (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Solar power comes from the sun. Solar (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ turn light from the sun into electricity. This is much (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for the planet.

Solar power has many uses. It can (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ houses and cars. It can (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ water.

Solar engineers work to make solar power more effective. They plan, (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and implement solar energy (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

There are (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with solar power. It only makes power when the sun is (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It is expensive, too. As a (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, only 2% of the world’s electricity comes from solar power.

But solar power is essential to the future of the planet. The work of solar engineers is very important. Their hard work can make solar power stronger and (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They can help make the world a cleaner place.

**Unit 16 Web Developer**

**Listen to the audio and fill in the blanks. Track 48**

You want to buy tickets for your (1)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ singer.

You go on the website to (2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ them. You click on the “Buy” button for the (3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Nothing happens. You (4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ again. The website crashes.

What is happening? Too many (5)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are using the website. Finally it works. You manage to put the tickets in your (6)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

You want to pay, but you can’t find the (7)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for it. You scroll down the page. You find it at the bottom of the (8)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Finally, you click “Pay.” But the tickets have sold out. You were too (9)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!

Doesn’t this (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ annoying?

Web (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have an important job. They design websites. They design what (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ look like. Text should be (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to read. Buttons should be easy to find.

They also (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the technical side of the website. Websites should load fast. They shouldn’t crash when many people use them.

Websites are fun to use. But they’re (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to design!