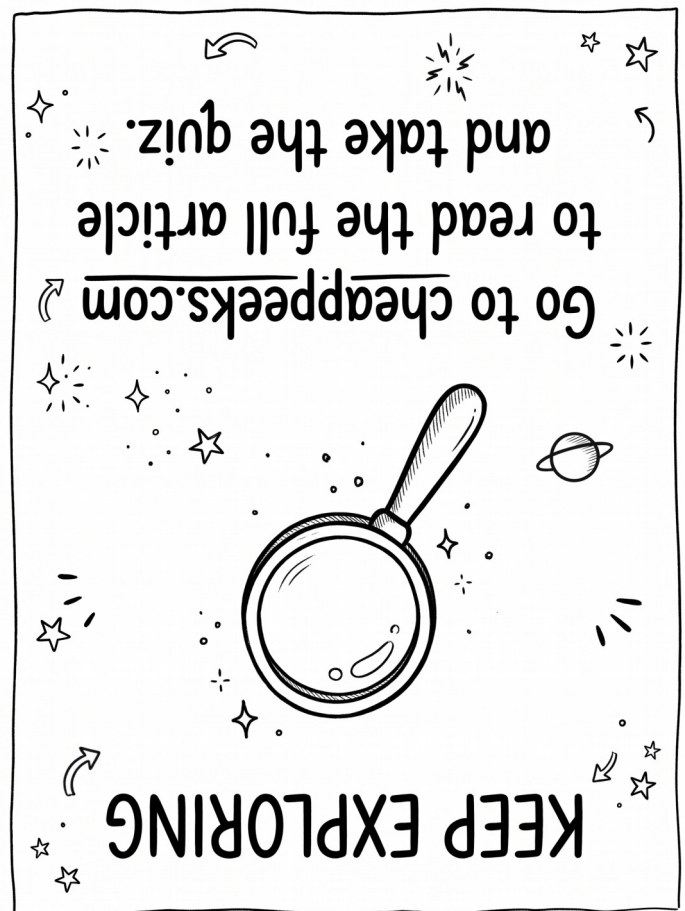




MY OBSERVATION

Every good detective takes notes!

What was happening? 
What were you doing, hearing, seeing, or thinking? 

What did you notice? 
Goosebumps? Chills? A shiver? Where did you feel it?

What might have caused it? 
Make your best guess. Scientists make guesses, too! 

One clue at a time leads to discovery! 

FOLLOW THE CLUES

What can your observations tell you?

1. Did you notice goosebumps or chills when you weren't cold? 
☐ Yes ☐ No ☐ Not sure

2. Can feelings cause physical reactions in your body? 
☐ I think so ☐ I'm not sure yet

3. What surprised you most? 

Curiosity is the first step toward discovery! 

Keep wondering. Keep exploring!

Something I'm still curious about...

One surprising thing I learned about my body is...

MY BIG DISCOVERY

Every discovery starts with curiosity!

MEET YOUR GOOSEBUMPS

A short invitation to look for clues.

1. **STIMULUS:** Cold or fear activates the nervous system.

2. **IMPULSE:** A tiny signal travels to the muscle.

3. **REACTION:** The muscle contracts, pulling the hair straight up & bunching the skin into a bump!

SCIENCE SLEUTH

Let's see what science can tell us!

1. What tiny muscle pulls a hair upright when we get goosebumps?

- ☐ The wiggle muscle
- ☐ The arrector pili muscle
- ☐ The jumping muscle

2. How can raised fur help a furry animal in cold weather?

- ☐ It traps a layer of air near the skin.
- ☐ It makes the animal move faster.
- ☐ It helps the animal hear better.

3. Why do you think humans still get goosebumps?

Every answer begins with a question!

CLUE COLLECTOR

When do you get goosebumps or chills?

Your body sometimes reacts before you even think about it. Over the next day or two, notice whether you experience goosebumps or a shivery feeling. Check any clues you discover!

- ☐ When I felt cold
- ☐ When I heard music or singing
- ☐ When a story, memory, or scene moved me
- ☐ When I felt excited or startled
- ☐ When I felt nervous or uneasy
- ☐ At another unexpected moment
- ☐ I didn't notice any this time

Detective's note: You don't have to make goosebumps happen. Just notice what happens naturally!