

## Coding Sequence Practice

### Lesson Transcript Example A (answers in manual):

*Teacher:* “Good morning, class! Please take out your materials.”

[Students take out their materials.]

*Teacher:* “Let's review what we learned last time. First question for everyone: What's the Earth's primary source of energy?”

*All Students (including Target Student):* “The Sun!”

*Teacher:* “Great! Now, thumbs up if you agree: Does the Earth orbit around the Sun?”

[Students, except Timmy (Target Student), raise their thumbs.]

*Teacher:* “Good. Timmy, what's the process of water changing from a liquid to a gas?”

*Timmy:* “Evaporation?”

*Teacher:* “Not quite, Timmy. It's called condensation. But don't worry, you'll get it. Here's another one for you, what's the process when water changes from a gas back into a liquid?”

*Timmy:* “That's condensation!”

*Teacher:* Excellent, Timmy! You got it! Keep it up.

[The class breaks into groups for an experiment and all including Timmy engage in an experiment.]

[After some time, the teacher asks two non-target students questions about the experiment.]

*Teacher:* “Timmy, let's join your group now and work together.”

[Timmy joins his group, and they continue the experiment.]

[After the experiment...]

*Teacher:* “Alright, class, let's come back to our seats. What did we learn about how temperature affects the rate of a chemical reaction?”

[Teacher calls on three non-target students and each respond.]

*Teacher:* “Excellent! Now, Timmy, what's the name of the process when a solid turns into a liquid?”

*Timmy:* “Melting!”

*Teacher:* “Great job, Timmy! Melting is when a solid turns into a liquid. And, class, what's the name of the process when a gas turns into a liquid?”

[All students respond in unison including Timmy.]

Lesson Transcript Example B (answers in manual):

*Teacher:* “Good morning, class! Today, we’re going to learn about the water cycle by reading this book together.”

[The teacher starts reading the book, pausing to ask questions.]

*Teacher:* “Okay, class, what’s the first step in the water cycle?”

*Non-target student:* “Evaporation!”

*Teacher:* “That’s right, Sarah! Now, who can tell me what happens next in the water cycle?”

[Three non-target students respond with the wrong answers.]

*Teacher:* “Great effort, but let’s think about it a bit more.”

*Timmy (Target Student):* “Um... condensation?”

*Teacher:* “Almost there, Timmy. Condensation comes later. Let’s keep listening.”

[Continues reading, and Timmy asks to go to the bathroom.]

*Teacher:* “Timmy, alright, but be quick.”

[Timmy leaves, and the teacher continues reading.]

*Teacher:* “Now, let’s transition to writing in our notebooks about what we’ve learned from the book.”

[Students start writing.]

*Teacher:* “Timmy, welcome back! Please grab your notebook and write about the water cycle.”

*Timmy:* “Okay, what do I write?”

*Teacher:* “Good question, Timmy. Start by writing about evaporation when water turns into vapor due to heat.”

[Timmy starts writing with the teacher’s guidance.]

*Teacher:* Nice job with your drawing of the water cycle, Timmy.

*Teacher to class:* “Now, let’s watch a science video on YouTube about the water cycle.

[After the video...]

*Teacher:* “Alright, class, what did we learn about the water cycle from the video?”

*Timmy:* “I learned that the water cycle is like a big circle, where water goes up into the sky, comes down as rain, and then goes up again.”

*Teacher:* “Excellent, Timmy! You’re absolutely right. The water cycle is indeed a continuous process. Great job, everyone!”

Lesson Transcript Example C:

*Teacher:* “Alright class, let's get started with today's science lesson. Please take out your science journals and a pencil.”

[Students rustle around as they gather their materials.]

*Teacher:* “Now, who can tell me something they know about water? Raise your hand.”

[Many hands shoot up.]

*Teacher:* “Yes, Sarah?”

*Sarah (non-target student):* “Water is H<sub>2</sub>O!”

*Teacher:* “Exactly, water is made up of two hydrogen atoms and one oxygen atom. Now, raise your hand if you've ever noticed that water beads up on some surfaces but not on others.”

[Nearly all students raise their hands, including Timmy (Target Student).]

*Teacher:* “Very good. That's due to a property of water called...?”

*Timmy:* [Blurting out without raising his hand] “Magic?”

*Teacher:* “Not quite, Timmy. Remember to raise your hand before answering. The property is called ‘cohesion’. It means water molecules stick together. But, since we're on you, Timmy, can you tell me why ice floats in water?”

*Timmy:* “Because... it's lighter?”

*Teacher:* “Not quite, Timmy. It's a common misconception. Ice floats because it's less dense than water. As water freezes, it expands. But that's a great try! Always remember, mistakes are how we learn.”

*Teacher:* “Now, for today's experiment, we're going to look at how temperature affects the solubility of a solid in water. Everyone put on your safety goggles.”

[The students excitedly put on their goggles.]

*Teacher:* “In front of you, you have a beaker of water, a thermometer, some salt, and a stirring rod. First, I want you to measure the temperature of the water and record it in your journals.”

[All students start the experiment. The teacher walks around the classroom, observing and guiding.]

*Teacher:* [To a group of students not including Timmy] “What do you predict will happen when we add salt to cold water versus warm water?”

*Non-target student 1:* “I think it will dissolve faster in warm water!”

*Teacher:* “That's a good hypothesis. Why do you think so?”

*Non-target student 2:* “Because heat makes things move faster, maybe?”

*Teacher:* “Very insightful! Heat does increase the kinetic energy of molecules, which can help solids dissolve faster.”

Lesson Transcript Example D:

*Teacher:* “Good morning, class! Today, we'll explore how the Earth's surface moves and changes over time. Let's start with a story.”

[She opens the book and begins reading. While most students are engrossed, a few appear distracted.]

*Teacher:* “...and that's why continents look like they fit together like puzzle pieces!”

[She closes the book.]

*Teacher:* “So, can anyone explain to me what plate tectonics is?”

[Many hands rise, but one student, Timmy (Target Student), is poking his neighbor.]

*Teacher:* “Timmy, please have a seat.”

[Timmy sits down, looking a bit embarrassed.]

*Teacher:* [Pointing to a non-target student] “Yes, Jenny?”

*Jenny (non-target student):* “It's like pieces of Earth's crust that move around on the molten rock below?”

*Teacher:* “Good job, Jenny! That's correct. The Earth's crust is broken into pieces called tectonic plates, and they float and move on the semi-fluid layer underneath called the mantle.”

*Teacher:* “Now, when these plates move, what do you think happens?”

[A few hands shoot up.]

*Teacher:* [Pointing to another student] “Jason?”

*Jason (non-target student):* “Um, they can crash into each other or move away?”

*Teacher:* “Excellent response, Jason! When plates move towards each other, it's called a convergent boundary; when they move apart, it's a divergent boundary.”

*Teacher:* “Alright, let's watch a short film to see this in action.”

[The lights dim, and a captivating animation about plate tectonics begins. The students are visually drawn to the movements and collisions of the plates.]

*Teacher:* “Timmy, remember to pay attention. This will help with our next activity.”

[The video ends and the lights come back on.]

*Teacher:* “Now, I'd like you all to open your science journals and write down three things you've learned about plate tectonics.”

[The sound of pens and pencils moving fills the room. Timmy is writing too.]

*Timmy:* “Can I go to the bathroom?”

*Teacher:* “Ok but go quick and remember to wash your hands.”

[Timmy leaves]

*Teacher:* “Who would like to share something they wrote?”

[A few hands go up.]

*Teacher:* [Pointing to a student named Ana] “Ana, what did you write?”

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*Ana (non-target student):* “I wrote that when two plates push against each other, they can form mountains!”

*Teacher:* “Exactly, Ana! When two plates converge or come together, they can push the Earth's crust up to form mountain ranges. Great observation!”

*Teacher:* [Looking around the room and pointing to another student] “And Carlos, what about you?”

*Carlos (non-target student):* “When plates move apart, like in the middle of the ocean, new crust can form?”

*Teacher:* “Absolutely right, Carlos! At divergent boundaries, especially at mid-ocean ridges, molten rock or magma rises from the mantle to form new crust as it cools. Well done!”

[There's a slight pause, and then the door quietly opens as Timmy returns.]

*Teacher:* “Welcome back, Timmy. Did you catch what Carlos just shared?”

*Timmy:* “Um, something about new crust forming in the ocean?”

*Teacher:* “Yes, exactly! I'm glad you caught that.”

[After the brief discussion, the bell rings]

*Teacher:* “Great job today, class! We'll be ending a bit early for lunch today. Remember to think about how our Earth moves beneath our feet!”