Teacher Answer Key

Case Study

1. Brain architecture is built through contingent interaction, meaning responses connected to what the child specifically just did. A tablet delivers the same output regardless of the child's actions, so research finds infants learn language sounds from a live responsive person while largely failing to learn them from a video of that same person.

2. Serve and return describes the exchange in which a baby serves by babbling or gesturing and an adult returns by responding. Mateo babbling, pausing, and waiting shows he now expects the return, so the pattern has become a genuine two-way exchange, which is the repeated interaction that builds language and attention circuits.

Multiple Choice

1. A

2. B

3. C

Matching

1-D, 2-A, 3-E, 4-C, 5-B

Fill-in-the-Blank

1) synapses, 2) pruning, 3) return

Short Answer (Sample Responses)

Q1: Producing more connections than needed lets the brain stay open to any environment a child might be born into, and pruning then keeps only what that specific environment actually uses. A brain retaining every possible connection would be slow and noisy, so removal is what converts a general-purpose brain into one tuned to the child's real world.

Q2: The mechanism that builds language circuits is contingent response, meaning feedback tied to what the child specifically just did, and a screen plays the same content no matter what the child does. Research shows infants learn language sounds from a live interacting person but largely fail to learn them from video of the same person.

Q3: During a sensitive period the relevant circuits are being actively built, so the brain is unusually receptive and learning is close to automatic. The brain keeps

meaningful plasticity throughout life, so later learning remains possible, but what changes is the effort required, since what is effortless at three becomes laborious later.