TESTING, TESTING 123

Curriculum under development
7/2015

TheatreSquared
Professional Theatre in Northwest Arkansas

The TESTING, TESTING 123 curriculum will be a 5-day interactive lesson plan designed to improve standardized test-taking skills by encouraging students to view the test as a fun challenge as opposed to a chore. At the completion of the unit, students will have had fun, improved their abilities to follow instructions, increased their close-reading skills (including their ability to identify key words or phrases, patterns and clues) and feel more confident approaching standardized tests.

LEARNING LAB WORKSHOP #1

FORMULAS AND RULES

1.) Lead the class in creating formula poems.

Have each student take out a piece of paper and make a list of the following parts of speech (they may need to refresher/examples) :

Verb

Noun

Verb

Adjective

Animal

2.) Now have students fill the words into the poem in the exact order they were created.

Go _____ the _____ but don't _____,

Because You and I are _____ _____ together.

The poem probably doesn't make any sense. Encourage them not to try to retro-fit the words in any way. Let it be nonsensical.

Now have them title their poems "How to Fall in Love"

Talk about how poetry is often surprising and sometimes makes us think about the world in new ways.

Ask for volunteers to share their poems. Have the class work together to "analyze" the poem and parse it for meaning. What could these metaphors mean? Are they true? What do they say about the way we love? Define metaphor and discuss the different metaphors we use regularly in our life.

3.) Lead reflective discussion.

This exercise is fun – but ONLY works if you follow the pattern exactly. What are other games or activities where the RULES are important for the enjoyment of the participants?

How are tests like games? Where do we find the rules? How can we determine what is being asked of us?

4.) Look at an example of a test question.

Today you will read three texts involving elephants. First you will read an article about an experiment. Then you will read a passage from the actual study of the experiment. Finally you will read about a different study of elephant behavior. As you review these sources, you will gather information and answer questions about the purposes and points of view of the authors and researchers. Then you will write an analytical essay. Read the article “Elephants Can Lend a Helping Trunk.” Then answer questions 8 through 10.

Elephants Can Lend a Helping Trunk
by
Virginia Morell

Elephants know when they need a helping hand—or rather, trunk. That’s the conclusion of a new study that tested the cooperative skills of Asian elephants (Elephas maximus) in Thailand and showed that the pachyderms understand that they will fail at a task without a partner’s assistance. The ability to recognize that you sometimes need a little help from your friends is a sign of higher social cognition, psychologists say, and is rarely found in other species. Elephants now join an elite club of social cooperators: chimpanzees, hyenas, rooks, and humans.

To test the elephants’ cooperation skills, a team of scientists modified a classic experiment first administered to chimpanzees in the 1930s, which requires two animals work together to earn a treat. If they don’t cooperate, neither gets the reward. For the elephants, the researchers used a sliding table with a single rope threaded around it. Two bowls of corn were attached to the table, but the elephants could reach them only by pulling two ends of the rope simultaneously. Working with mahout—Asian elephant trainers—trained elephants at the Thai Elephant Conservation Center in Lampang, the researchers first taught individual animals to pull the rope with their trunks. The 12 elephants were then divided into six pairs, and each pair was released to walk to their waiting ropes. If one animal pulled the rope before the other, the rope would slip out, leaving the table—and treats—in place. “That taught them to pull together,” says Joshua Plotnik, a postdoc in experimental psychology at the University of Cambridge in the United Kingdom and the lead author of the study, which appears online this week in the. To find out if the elephants understood that they needed one another’s assistance, the researchers upped the challenge by releasing the elephants at different times. Thus, one elephant would arrive at the table before the other and would have to wait for a partner to show up before pulling the rope. “They learned to do this faster than the chimpanzees,” says Plotnik. “They would stand there holding their end of the rope, just waiting.” In another experiment, the partner’s rope was placed out of reach. “When the partner couldn’t do anything, the other one would just give up,” Plotnik says. That shows the elephants understood why the partner was needed, he adds. “These are clever experiments,” says Karen McComb, a behavioral ecologist at the University of Sussex in the United Kingdom who studies social cognition in wild elephants. The findings are consistent with observations in nature, she says. For instance, in East Africa biologists have seen elephants work together to lift a fallen companion with their tusks. “It’s particularly striking that the elephants were able to inhibit pulling” longer than chimpanzees do, says comparative psychologist Nicola Clayton of the University of Cambridge in the United Kingdom. She and her team showed that rooks, too, could pass a similar dual-rope exam, although they failed to wait. The study “adds to the growing body of evidence that elephants show some impressive cognitive abilities.”

Part A
The key terms cognition and cognitive are used in paragraphs 1 and 4 of the article “Elephants Can Lend a Helping Trunk.”
What elephant trait do these key terms refer to?

Part B
Which group of phrases from the article helps the reader understand the meaning of cognition and cognitive?

A physical strength

B emotional expression

C mental awareness

D visual sensitivity

PART C
Which group of phrases from the article helps the reader understand the meaning of cognition and cognitive?

A “Elephants know . . . .”; “. . . pachyderms understand . . . .”; and “. . . ability to recognize . . .” (paragraph 1)

B “. . . they will fail . . . .”; “. . . partner’s assistance . . .”; and “. . . a little help from your friends . . .” (paragraph 1)

C “‘. . . clever experiments . . .’”; “. . . observations in nature . . .”; and “. . . body of evidence . . .” (paragraph 4)

D “. . . work together to lift a fallen companion . . .”; “. . . inhibit pulling . . .”; and “. . . dual-rope exam . . .” (paragraph 4

What EXACTLY are they looking for? What are the rules? How can we win?

LEARNING LAB WORKSHOP #2

ACTIVATING WORD PROBLEMS

GOAL: To explore possibility of activating math test questions through arts-integration.

EXERCISE 1:

1.) Lead the large group through the decision tree.
Questions: How will I know whether I should go or not – it's like a pros and cons chart…but with math.

RULE: Each rung of decision, must equal 100%

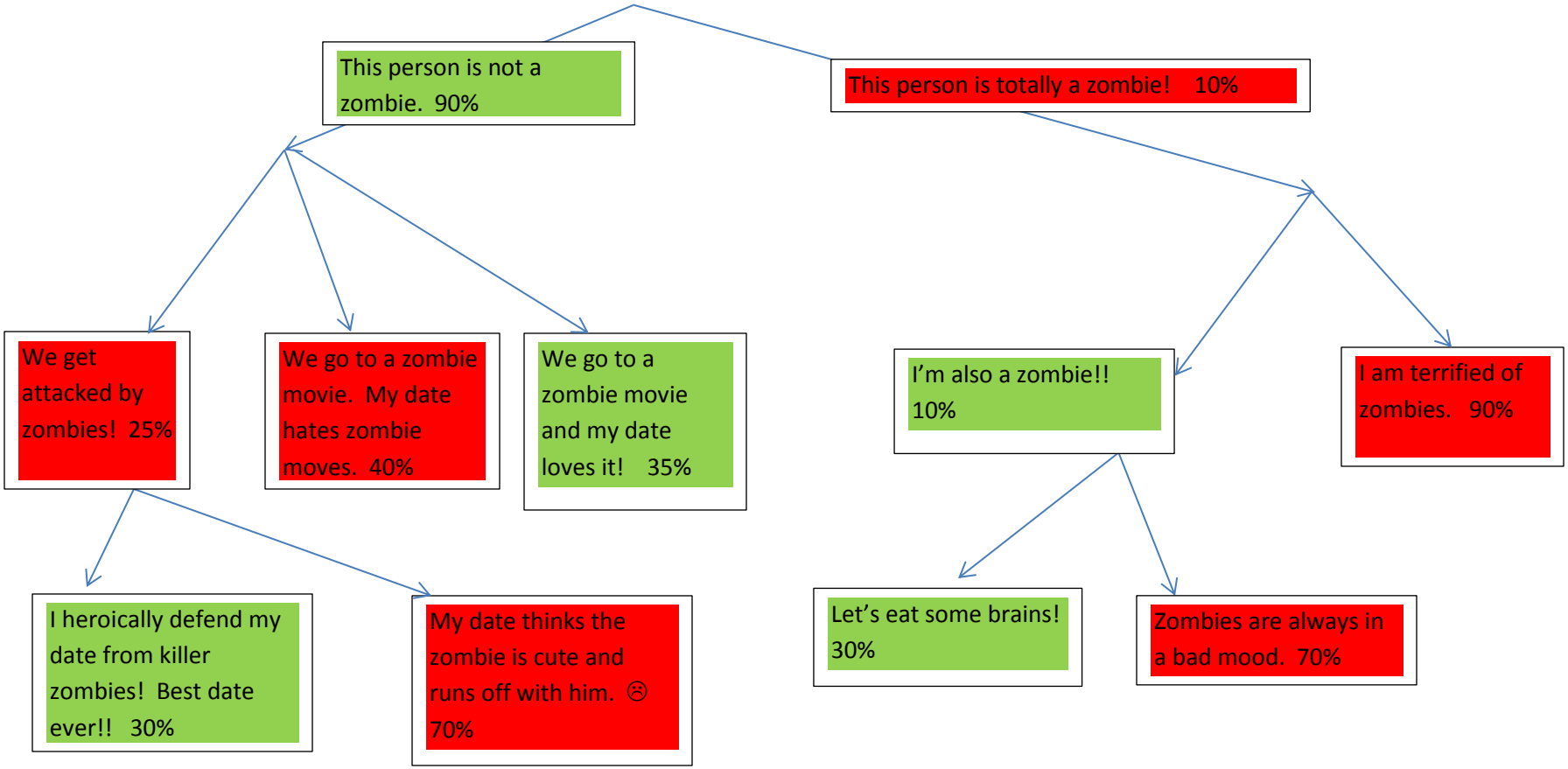
Identify which of the scenarios ends with a good date, and which would be a bad date.

Have them work in pairs to complete the worksheet .
What percentage of dates are good? What percentage are bad? Should I go on this date?

Now break into small groups. Have each group create a scenario, with a five steps of determining probability.
Remind them that each rung of decision, must equal 100%

They will multiply the probability of independent events, and add them to determine probability.
Have the class vote on the most creative – for a prize.

I've been asked on a date. They are acting very weird and may be a zombie…should I go on this date?



You are victorious in a zombie battle, and your date thinks you're cool: 6.75%
You and your date go to a zombie movie and she likes it: 31.5%
As a zombie, you and your zombie date have a lovely time eating brains: 0.3%

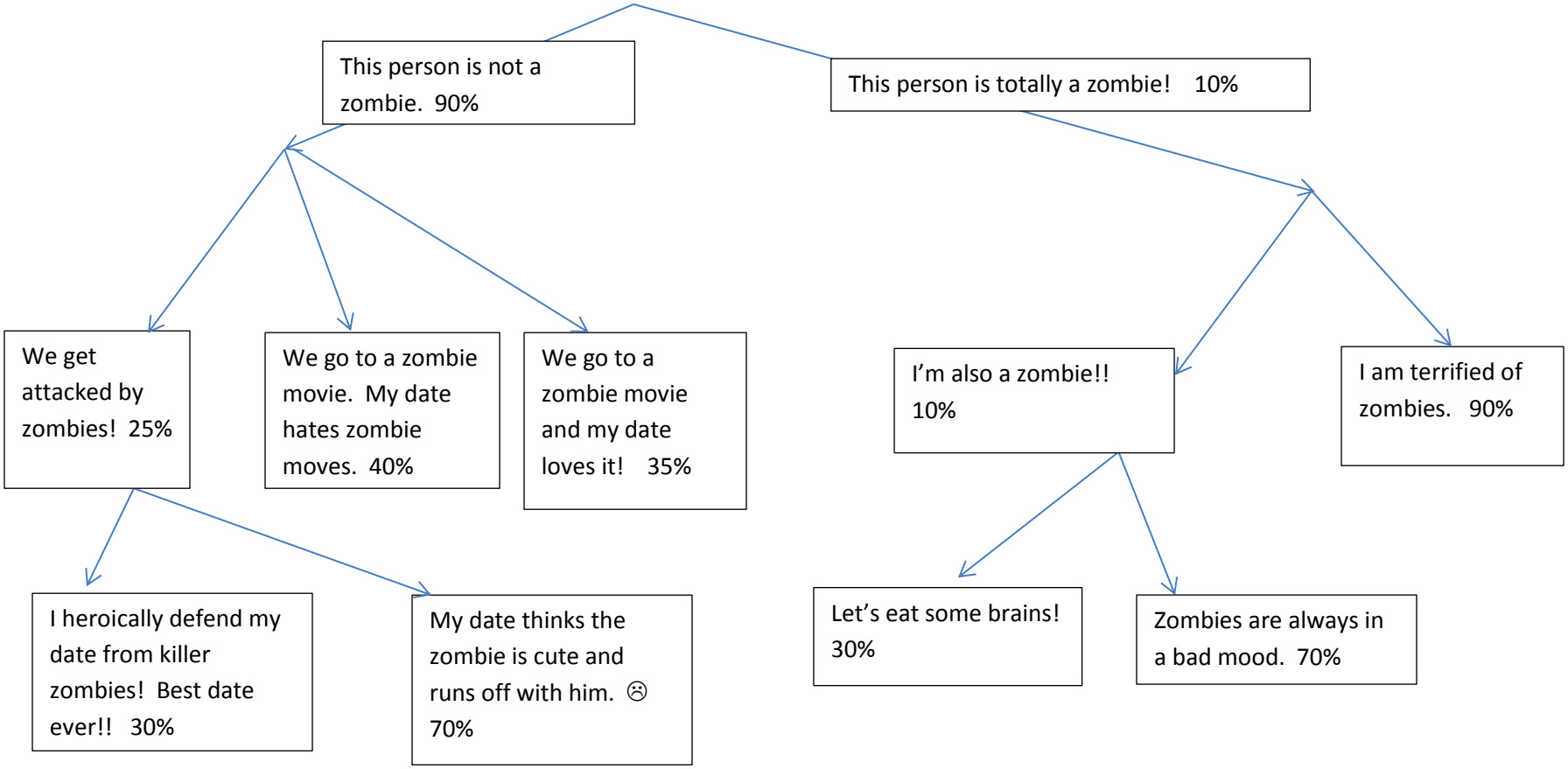
Good date: 38.55

You go to a zombie movie, and your date thinks it's stupid and lame. (Urgh!): 36%
You get attacked by zombies, and your date runs off with them: 15.75%
As a zombie, your date is moody and lethargic: 0.7%
My date is a zombie! I'm not a zombie?! That's just weird! I don't like this: 9%

Bad date: 61.45

Worksheet for Students:

I've been asked on a date. They are acting very weird and may be a zombie…should I go on this date?



You are victorious in a zombie battle, and your date thinks you're cool: _____%
You and your date go to a zombie movie and she likes it: _____%
As a zombie, you and your zombie date have a lovely time eating brains: _____%

Good date: _____%

You go to a zombie movie, and your date thinks it's stupid and lame. (Urgh!): _____%
You get attacked by zombies, and your date runs off with them: _____%
As a zombie, your date is moody and lethargic: _____%
My date is a zombie! I'm not a zombie?! That's just weird! I don't like this:_____%

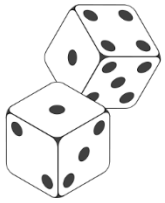
Bad date: _____%

SHOULD I GO ON THIS DATE? _____

EXERCISE #2
DICE

Divide the class into 6 groups.
Have each group come to a consensus about how many times they predict a 7 will be rolled, if we roll it 72 times.
Have each group provide reasoning for their guess.
(best guess will be 12)
Explain how we get to this conclusion.
The sample space is 36…6 possible outcomes of each dice, multiplied together to get 36.
There are 6 possible ways to land on a 6…so you have 6/36. If we roll 72, multiply both the possibility and the sample space by 2, and you'll get 12/36.

Have them write their guess on a card – and their team name on the other side of the card.
Give each of the groups a set of dice, and have them roll the dice 12 times, recording what they rolled.
Add each group's 7s together to get the combined probability of rolling a 7.
Discuss why it may be a variation.



DICE!

How can I roll a 2?	1-1
How can I roll a 3?	2-1 or 1-2
How can I roll a 4?	1-3 or 2-2 or 3-1
How can I roll a 5?	1-4 or 2-3 or 3-2 or 4-1
How can I roll a 6?	1-5 or 2-4 or 3-3 or 4-2 or 5-1
How can I roll a 7?	1-6 or 2-5 or 3-4 or 4-3 or 5-2 or 6-1
How can I roll a 8?	2-6 or 3-5 or 4-4 or 5-3 or 6-2
How can I roll a 9?	3-6 or 4-5 or 5-4 or 6-3
How can I roll a 10?	4-6 or 5-5 or 6-4
How can I roll an 11?	5-6 or 6-5
How can I roll a 12?	6-6

LEARNING LAB WORKSHOP #3

Goal: To explore and assess close reading of Science text (ACT)

EXERCISE #1: Learn Tableau technique

A tableau is a frozen picture that tells a story, like an illustration in a book. Tableaus are created in small groups with limited time constraints—1 minute challenges and 4 minute challenges. The simpler ideas should be created in 1 minute. The more complicated ideas that require deeper discussion should be given 4 minutes. Watch the clock and give them reminders every thirty seconds. Count down from 5 at the end. The entire picture should be frozen by "One."

Before "writing" with tableau, ***practice*** the technique. Give them one- minute challenges to create (in this order): a bicycle, a roller coaster, a birthday party. Discuss during each different prompt the importance of creating levels (low, medium, high) in order to make compelling artistic pictures. Also no props, scenery, set pieces (chairs), or costumes. Do NOT sit on each other. Do not put your body in a position that will become uncomfortable to hold for five or more minutes.

IMPORTANT: Each time they create tableau, regardless of the assignment, the small collaborative groups must go through these questions before creating the tableau within the time constraint.

Advise the groups and remind them each time of the 3 questions each group should follow when making a tableau.

1. What are making? (if it's a birthday party, whose? A child's, an adult's, a cat's?)
2. What parts do we need? (based on what kind of birthday party)
3. What part do I play? (NO DIRECTORS! Everyone should make an offering on what they can play)
4.

EXERCISE 2: SHOW ME THE STORY

Objective: to assess a comprehension of text by having the students demonstrate through tableau.

Divide class into 6 groups. Assign each group a paragraph. The small groups create a tableau after hearing each passage. Allow no more than 6 minutes. As they work, walk around and eavesdrop, listening for the discussion of the 3 questions. Resist the temptation to jump in and correct or advise. Your interruption will cut into their time. Give them the opportunity to learn from their mistakes. Save your critiques and instruction for after a tableau is finished. If a group "fails", ask them why they didn't meet the challenge. If they felt they didn't have enough time, remind them if they followed the 3 questions in the correct order, they should have had plenty of time.

NATURAL SCIENCE: This passage is adapted from the article "How to Build a Baby's Brain" by Sharon Begley (©1997 by Newsweek, Inc.). In this selection, the term *neuron* refers to a specialized cell of the nervous system, and *tomography* refers to a method of producing three-dimensional images of internal structures.

You cannot see what is going on inside your new-born's brain. You cannot see the electrical activity as her eyes lock onto yours and, almost instantaneously, a neuron in her retina makes a connection to one in her 5brain's visual cortex that will last all her life. The image of your face has become an enduring memory in her mind. And you cannot see the explosive release of a neurotransmitter—brain chemical—as a neuron from your baby's ear, carrying the electrically encoded10sound of "ma," connects to a neuron in her auditory cortex. "Ma" has now commandeered a cluster of cells in the infant's brain that will, as long as the child lives, respond to no other sound.

You cannot see any of this. Butcome close. With positron-emission tomography, a pediatric neurobiologist, watches the regions of a baby's brain turn on, one after another, like city neighborhoods having their electricity restored after a blackout. He can measure activity in the primitive brain stem and sensory cortex from the moment the baby is born. He can observe the visual cortex burn with activity in the second and third months of life. He can see the frontal cortex light up at 6 to 8 months. He can see, in other words, that the brain of a baby is still forming long after the child has left the womb—not merely growing bigger, but forming the microscopic connections responsible for feeling, learning and remembering.

Scientists are just now realizing how experiences after birth, rather than something innate, determine the actual wiring of the human brain. Only 15 years ago neuroscientists assumed that by the time babies are born, the structure of their brains had been genetically determined. But by 1996, researchers knew that was 35wrong. Instead, early-childhood experiences exert a dramatic and precise impact, physically determining how the intricate neural circuits of the brain are wired. Since then they have been learning how those experiences shape the brain's circuits.

At birth, the brain's 100 billion or so neurons form more than 50 trillion connections (synapses). The genes the baby carries have already determined his brain's basic wiring. They have formed the connections in the brain stem that will make the heart beat and the lungs respire. But that's all. Of a human's 80,000 different genes, fully half are believed to be involved in forming and running the central nervous system. Yet even that doesn't come close to what the brain needs. In the first months of life, the number of synapses will increase 20-50 fold—to more than 1,000 trillion. There simply are not enough genes in the human species to specify so many connections.

That leaves experience—all the signals that a baby receives from the world. Experience seems to exert its 55effects by strengthening synapses. Just as a memory will fade if it is not accessed from time to time, so synapses that are not used will also wither away in a process called pruning. The way to reinforce these wispy connections has come to be known as stimulation. Contrary to the claims of entrepreneurs preying on the anxieties of new parents, stimulation does not mean subjecting a toddler to flashcards. Rather, it is something much simpler—sorting socks by color or listening
to the soothing cadences of a fairy tale. In the most extensive study yet of what makes a difference, Craig Ramey of the University of Alabama found that it was blocks, beads, peekaboo and other old-fashioned measures that enhance cognitive, motor and language development—and, absent traumas, enhance them permanently.

The formation of synapses (synaptogenesis) and their pruning occurs at different times in different parts of the brain. The sequence seems to coincide with the emergence of various skills. Synaptogenesis begins in the motor cortex at about 2 months. Around then, infants lose their "startle" and "rooting" reflexes and begin to master purposeful movements. At 3 months, synapse formation in the visual cortex peaks; the brain is fine-tuning connections allowing the eyes to focus on an object. At 8 or 9 months the hippocampus, which indexes and files memories, becomes fully functional;
only now can babies form explicit memories of, say, how to move a mobile. In the second half of the first year, finds Chugani, the prefrontal cortex, the seat of forethought and logic, forms synapses at such a rate that it consumes twice as much energy as an adult
brain. That furious pace continues for the child's first decade of life.

Now assess whether the comprehension can be transferred to the following test questions:

TEST QUESTIONS

1. The main point of this passage is to:
    1. A. illustrate the importance of genetics in the formation of a baby's brain.
    2. B. illustrate the importance of stimulation and experience in the formation of a baby's brain.
    3. C. indicate the great need for conducting further research on babies' brains.
    4. D. compare the latest research on babies' brains with similar research conducted fifteen years ago.
2. The main point made in the second, third, and fourth paragraphs (lines 14–52) is that the structure of a baby's brain:
    1. F. is genetically determined before the child is born.
    2. G. can be seen through positron-emission tomography.
    3. H. can be altered through a process known as pruning.
    4. J. is still developing after the child is born.
3. According to the passage, one thing PET allows neurobiologists to do is:
    1. A. observe activity in the frontal cortex of a baby's brain.
    2. B. determine the number of genes involved in the formation of a baby's brain.
    3. C. control the release of neurotransmitters in a baby's auditory cortex.
    4. D. restore microscopic connections in a baby's brain.
4. When she compares a baby's brain to city neighborhoods, the author is most nearly illustrating her point that:
    1. F. neurotransmitters are actually brain chemicals.
    2. G. regions of the brain are awakened through experience.
    3. H. the visual cortex allows a baby to recognize specific images.
    4. J. a baby's brain has about 1,000 trillion synapses.
5. Which of the following would the author of the passage be LEAST likely to recommend as a way to strengthen the synapses of a baby's brain?
    1. A. Reading to a baby
    2. B. Playing peekaboo with a baby
    3. C. Teaching a baby with flashcards
    4. D. Showing a baby how to distinguish red socks from blue blocks
6. The last paragraph suggests that the formation of synapses occurs most rapidly:
    1. F. during the first two months of a child's life.
    2. G. during the first nine months of a child's life.
    3. H. from the time a child is about six months old until that child is about ten years old.
    4. J. from the time a child is about one year old until that child is well into adolescence.
7. As it is used in line 30, the phrase *something innate* most nearly means:

    1. A. a memory.
    2. B. learned behavior.
    3. C. physical immaturity.
    4. D. an inherited trait.
8. The fifth paragraph (lines 53–70) suggests that one of the main causes of pruning is:
    1. F. a lack of stimulation.
    2. G. an insufficient number of genes.
    3. H. the use of flashcards.
    4. J. the strengthening of synapses.
9. When the author refers to “entrepreneurs preying on the anxieties of new parents” (lines 60–61), she is most likely suggesting that new parents should:
    1. A. give their babies products such as flashcards only if they have examined these products carefully.
    2. B. not be deceived by advertising that claims certain products will increase a baby’s intelligence.
    3. C. not worry if their babies’ development is slightly behind that suggested by neurobiologists.
    4. D. take their pediatrician’s advice before they listen to the advice given by other family members.
10. The passage states that, in terms of development, the average baby should be able to:
    1. F. focus his or her eyes on an object at two months of age.
    2. G. develop a “startle” reflex at about two months of age.
    3. H. make logical connections between ideas at about four months of age.
    4. J. form explicit memories at about nine months of age.