Webster County Schools

6th Grade

Packet 7

Move Over, Spider-Man— Here's Spider-Goat!

by Joli Allen

1   Making silk threads isn't just for spiders anymore. A special type of goat is doing it, too. Nubian goats look and act like any other playful, floppy-eared goats. But when they aren't playing, these goats are busy making spider silk.

2   Spider silk is absolutely amazing. It's five times stronger than steel, but it's also very light and flexible. Because of this, scientists plan to use it to make some totally cool things! Imagine clothing that's as light as a cobweb, yet won't tear, or fishing line and tennis racket strings that won't break. Doctors might be able to use spider silk for making tiny stitches in delicate eye surgery, but it could also be strong and flexible enough to replace some worn-out parts of the human body. The silk also could be used to build airplanes, buildings, and bridges, as well as create a tough coating for space stations. Because of all these possibilities, scientists have been searching for ways to make spider silk in huge quantities, and they have finally found the answer: Nubian goats!

3   Scientists have studied spider silk for years. They tried to raise spiders on spider farms to collect silk from them, but the spiders didn't enjoy living so close to one another. Spiders like their own space, and when they don't get it . . . well . . . they make space by eating their neighbors!

4   Goats, the scientists discovered, are much friendlier than spiders and are also easier to work with. Because they're bigger, a few goats can produce more silk than a roomful of spiders. The scientists chose Nubian goats for this job because they make milk at a younger age than many other

goats. So, the Nubian goats will make spider silk sooner and for longer periods of time.

5   But how do the goats actually make the spider silk? That's what scientist Jeffrey Turner wanted to figure out when he taught animal science at McGill University in Montreal. He noticed that the body parts of spiders that make silk and the parts of goats that make milk are very much alike. Because of this, he figured that goats might be able to make spider silk. The idea excited him, and he started his own company in 1993 to do more research on how goats could do what spiders have been doing for years.

6   Eventually, Turner and his fellow scientists found a way to place spider genes in goats so that the genes fit nicely, like a guest in a comfortable hotel. Every living animal, including humans, has a set of genes inside of it that tells its body what to do. These genes are very, very tiny, but they hold lots of information on how to build parts of the body. A spider's genes contain instructions for making spider silk, and a goat's genes contain instructions for making milk. So by putting spider genes into goats, the goats then have the genes that tell their bodies how to make spider silk proteins.

7   Proteins are the body's basic building blocks. Just as people have proteins in their bodies that make their hair, skin, and muscles, the goats now have special proteins for making spider silk. When the goats produce milk, the spider silk proteins are in it, but it looks just like regular milk. Scientists separate the proteins out of the milk by skimming off the fat and then sprinkling salt on it. The salt makes the spider silk proteins curdle into small clumps. These clumps are scooped out, and water is added until the mixture has the thickness of maple syrup. This is spider silk, and it's ready to be spun!

8   Next, the silk is taken to a spinning machine that copies the way spiders spin their silk. The secret to extra strong silk is in how the spiders

spin it: they stretch the silk over and over again. The stretching makes all the protein building blocks line up, lock together, and form a strong but flexible band. When the giant spinning machine is finished, the silk threads are stronger than steel and as flexible as rubber . . . but they're also thinner than a human hair.

9   Producing milk with spider proteins in it doesn't hurt the goats. Scientists did years of research to make sure the goats would be safe and healthy. The milk that's left after the spider proteins are removed can still be used—as fertilizer on fields that grow feed for the goats.

10   In 1998, Dr. Turner bought a farm in Canada for raising his spider-silk goats, and they still live there today. The one thousand goats that make spider silk are raised in a normal environment and are healthy, curious, and energetic—just like any other Nubian goats. Their owner gives them lots of space to roam and play. The goats particularly enjoy rolling down the farm's grassy hills, and they love listening to country music. Other music, such as rock music, has strange rhythms that make the goats jittery, but the steady beat of country music keeps them calm and happy. H'm . . . I wonder if they'd like the "Itsy Bitsy Spider" song.

1. In paragraph 2, the author explains why scientists are trying to find a way to produce spider silk using goats by showing:

    A possible uses for spider silk

    B the popularity of spider silk

    C how easy spider silk is to use

    D how quickly spider silk can be developed

2. Which statement best explains an advantage of using goats rather than spiders for the production of silk?

A Goats produce stronger silk than spiders do.

B Scientists can insert genes into goats but not into spiders.

C Spider proteins in goat milk can be spun into silk.

D Goats are bigger than spiders and are much easier to raise.

3. What did Jeffrey Turner discover about using Nubian goats for possible silk production?

A Nubian goats already make a similar substance.

B Nubian goats have high amounts of protein in their milk.

C Nubian goats and spiders both prefer living in large groups.

D Nubian goats and spiders have body parts that are similar.

4. In the process described in paragraph 7, which step allows the threads to become strong enough for surgical procedures?

A The silk proteins are turned into clumps.

B The silk is stretched repeatedly.

C Salt is added to the goat's milk.

D Water is added to thin the clumps.

5 Read the following lines from the final paragraph:

"Their owner gives them lots of space to roam and play. The goats particularly enjoy rolling down the farm's grassy hills, and they love listening to country music. Other music, such as rock music, has strange rhythms that make the goats hitter, but the steady beat of country music keeps them calm and happy. Hmmm.... I wonder if they'd like the 'Itsy Bitsy Spider' song."

Why are these lines important to the article?

    A They suggest that the goats are unusual.

    B They explain how the goats are kept busy.

    C They explain that the goats are treated well.

    D They suggest that the goats are like humans.

6. Which statement best expresses a central idea of the article?

    A Nubian goats produce better quality silk than spiders.

    B Spider silk is a complex substance that takes effort to make.

    C Nubian goats have been genetically altered to produce spider silk.

    D Spider silk contains proteins that are similar to proteins in other living things.

7. Which detail is most important to include in a summary of the article?

A Scientists have made an attempt to gather silk from spiders living on farms.

B Spider silk has qualities that can be used in many products.

C A scientist started a company to research goat silk.

D Machines spin spider silk into thin threads.

KEY: 6th Grade Comprehension Passage V

Move Over, Spider-Man— Here's Spider-Goat!

by Joli Allen

	Item Type	Correct Answer		Standard
1	Multiple Choice	A	1	CCSS.ELA-Literacy RI 6.3
2	Multiple Choice	D	1	CCSS.ELA-Literacy. RI 6.1
3	Multiple Choice	D	1	CCSS.ELA-Literacy. RI 6.3
4	Multiple Choice	B	1	CCSS.ELA-Literacy. RI 6.3
5	Multiple Choice	C	1	CCSS.ELA-Literacy. RI 6.5
6	Multiple Choice	C	1	CCSS.ELA-Literacy. RI 6.2
7	Multiple Choice	B	1	CCSS.ELA-Literacy RI 6.2

Excerpt from **Interference Powder**
by Jean Hanff Korelitz

1   The art studio was at the end of the corridor. Its walls were splotched by years of flung paint, and pockmarked from thousands of thumbtacks. All sorts of stuff was pinned up, from kindergarten smudges to our own collage self-portraits, with papier-mâché objects dropping down from the ceilings to sway over our heads. One of my own paintings hung on the wall between two of the windows, and I smiled when I saw it. It was a picture I was kind of proud of: a study of Isobel's face, up close, her thin smile stretching across her face and her skin very white against a purple background. Isobel called this her vampiress portrait, which wasn't exactly a compliment. Still, I knew she liked the picture and felt proud to see it up on the wall.

2   When we got to the art room, I was surprised that Mrs. Smith, our teacher, was absent and in her place stood a tall woman with long hair in hundreds of little braids, some of them with beads and shells woven into their ends. The hair was mostly gray, but the woman's face wasn't really old. In fact, she looked around the same age as my mom. She grinned at us from the center of the room, with her hands thrust deep into the pockets of her big, faded apron, which she wore over jeans so worn they looked buttery-soft. In one ear she wore a long, dangly earring with a feather that brushed her shoulder. Nothing was in her other ear. Her fingers were bare, but her wrists clattered with little bracelets, silver and gold and every color. I stared at those bracelets. I had never seen anything like them.

3   Our class was bunched up at the door, uncertain about whether or not to enter, given that our art teacher wasn't there; but this different person

motioned us inside, grinning all the while. "Come on!" she said gleefully. "Mrs. Smith is sick today, so I was called in. My name is Charlemagne."

4   Charlemagne! Isobel and I exchanged a look. Only the week before, Isobel's father had shown us a print of an old painting with a man in a chair. Four priests were standing over him, waving something that looked like palm fronds[1].

5   "Is he a saint?" Isobel had asked.

6   Her dad had laughed. "He thought he was. But no. He's King Charlemagne of France. Charles the Great! He made war on absolutely everybody."

7   And now, here we were, only a week later, confronted with one of Charles the Great's actual descendants, since what else could Ms. Charlemagne be? Imagine being descended from a medieval French king! How totally thrilling! Mom always told me that her great-great-great-uncle had invented the glue they use on the back of postage stamps, but that was nothing compared to being connected to ancient royalty.

8   Ms. Charlemagne began passing out paper as we drifted to the art tables. "I don't have 35 any special plan today," she said. "I think we'll just see where our creativity takes us. Let's see what happens on the page. After all, that's what artists do, isn't it?"

9   Was it? I'd always thought they planned their paintings beforehand and then tried to make the picture on the canvas match the picture in their mind. That's what I always did, anyway.

10   The kids around me were picking through the pencil and crayon bins, looking at one another with uncertain expressions. They were used to being told by Mrs. Smith what the day's subject was or how they were supposed to make their pictures.

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[1] Fronds – palm leaves

11   "Let's let the colors pick themselves!" Ms. Charlemagne chirped. "Let's let the pictures tell us what they should look like! Let's see what's on your mind today!"

12   I looked down at my blank white sheet. I knew what was on my mind. My low 62 grade, my never-to-be-had singing lessons, my mom's expression when she sees my test score tonight. I sighed and reached for a pencil. I began to draw my mother in our kitchen at home, her face pinched up in a frown. I drew her thin eyebrows and her eyes, with their pretty, curling eyelashes, looking down. I drew her hair falling forward a bit and one hand, the one that still wore my father's wedding ring, on the table before her. Next to that hand I drew my test; and just to make myself feel even worse, I drew my ugly score—62—right there on the paper. For a long moment I glared at it, as if willing it to change.

13   Then it struck me! I *could* change that number, at least here if not in real life. I could 55 turn my pencil over and rub those terrible numbers away, then write new numbers in their place. I was the lord of my own picture, wasn't I? I could give myself a 63 on my social studies test, or a 61, or . . . why not even a perfect 100?

1. How does Nina's attitude toward Ms. Charlemagne change?

    A Nina becomes less interested after noticing Ms. Charlemagne's bracelets.

    B Nina becomes more fascinated after learning Ms. Charlemagne's name.

    C Nina becomes less surprised after hearing Ms. Charlemagne's viewpoints. D Nina becomes more suspicious after hearing Ms. Charlemagne's assignment.

2. How does paragraph 7 contribute to the development of the story?

    A by suggesting that Ms. Charlemagne is not qualified to teach art

    B by introducing Nina to a new way to think about art

    C by showing that Ms. Charlemagne does not understand how artists work

    D by describing the way Nina usually completes art assignments

3. Why does the author use the word "chirped" in paragraph 11 of the story?

    A to reveal that Ms. Charlemagne has creative ideas

    B to imply that Ms. Charlemagne is new at teaching art

    C to demonstrate that Ms. Charlemagne has a cheerful outlook

    D to show that Ms. Charlemagne easily relates to the art students

4. Read this sentence from line paragraph 13:

I could change that number, at least here if not in real life.

How does this sentence best contribute to the development of the story?

    A by signaling a change in Nina's thinking

    B by emphasizing the importance of the setting

    C by revealing Nina's strong feelings

    D by suggesting a new plot development

5. Which quotation best supports a theme of the story?

    A "Still, I knew she liked the picture and felt proud to see it up on the wall." (paragraph 1)

    B "I had never seen anything like them." (paragraph 2)

    C "Imagine being descended from a medieval French king!" (paragraph 7)

    D "I was the lord of my own picture, wasn't I?" (paragraph 13)

6. Based on details in the story, what can readers conclude about Ms. Charlemagne?

    A She is a respected artist.

    B She has a famous relative.

    C She has a unique personality.

    D She is a popular substitute teacher.

7. How do the details in the story help develop a theme?

A Nina's thoughts about her mother help develop the theme that being honest will make you feel better.

B Nina's interaction with Isobel helps develop the theme that experiencing a new situation is easier with a friend.

C Nina's drawing helps develop the theme that expressing yourself can help you work through your struggles.

D Nina's description of Ms. Charlemagne helps develop the theme that judging others by their appearance is not a good idea.

KEY: 6th Grade Comprehension Passage VI
Excerpt from **Interference Powder**
by Jean Hanff Korelitz

	Item Type	Correct Answer		Standard
1	Multiple Choice	B	1	CCSS.ELA-Literacy RL 6.3
2	Multiple Choice	B	1	CCSS.ELA-Literacy. RL 6.5
3	Multiple Choice	C	1	CCSS.ELA-Literacy. RL 6.4
4	Multiple Choice	A	1	CCSS.ELA-Literacy. RL 6.5
5	Multiple Choice	D	1	CCSS.ELA-Literacy. RL 6.2
6	Multiple Choice	C	1	CCSS.ELA-Literacy. RL 6.1
7	Multiple Choice	C	1	CCSS.ELA-Literacy RL 6.2

Excerpt from *The Great Fire* by Jim Murphy

The Great Fire of Chicago is considered the largest disaster of the 1800s. It is rumored to have started in the barn of Patrick and Catherine O'Leary.

(1) A shed attached to the barn was already engulfed by flames. It contained two tons of coal for the winter and a large supply of kindling wood. Fire ran along the dry grass and leaves, and took hold of a neighbor's fence. The heat from the burning barn, shed, and fence was so hot that the O'Learys' house, forty feet away, began to smolder. Neighbors rushed from their homes, many carrying buckets or pots of water. The sound of music and merrymaking stopped abruptly, replaced by the shout of "FIRE!" It would be a warning cry heard thousands of times during the next thirty-one hours.

(2) Chicago in 1871 was a city ready to burn. The city boasted having 59,500 buildings, many of them—such as the Courthouse and the Tribune Building—large and ornately decorated. The trouble was that about two-thirds of all these structures were made entirely of wood. Many of the remaining buildings (even the ones proclaimed to be "fireproof") looked solid, but were actually jerrybuilt[1] affairs; the stone or brick exteriors hid wooden frames and floors, all topped with highly flammable tar or shingle roofs. It was also a common practice to disguise wood as another kind of building material. The fancy exterior decorations on just about every building were carved from wood, then painted to look like stone or marble. Most churches had steeples that appeared to be solid from the street, but a closer inspection would reveal a wooden framework covered with cleverly painted copper or tin.

(3) The situation was worst in the middle-class and poorer districts. Lot sizes were small, and owners usually filled them up with cottages, barns, sheds, and outhouses—all made of fast-burning wood, naturally. Because both Patrick and Catherine O'Leary worked, they were able to put a large addition on their cottage despite a lot size of just 25 by 100 feet. Interspersed in these residential areas were a variety of

(4) Wealthier districts were by no means free of fire hazards. Stately stone and brick homes had wood interiors and stood side by side with smaller wood-frame houses. Wooden stables and other storage buildings were common, and trees lined the streets and filled the yards.

(5) The links between richer and poorer sections went beyond the materials used for construction or the way buildings were crammed together. Chicago had been built largely on soggy marshland that flooded every time it rained. As the years passed and the town developed, a quick solution to the water and mud problem was needed. The answer was to make the roads and sidewalks out of wood and elevate them above the waterline, in some places by several feet. On the day the fire started, over 55 miles of pine-block streets and 600 miles of wooden sidewalks bound the 23,000 acres of the city in a highly combustible knot.

(6) Fires were common in all cities back then, and Chicago was no exception. In 1863 there had been 186 reported fires in Chicago; the number had risen to 515 by 1868. Records for 1870 indicate that fire-fighting companies responded to nearly 600 alarms. The next year saw even more fires spring up, mainly because the summer had been unusually dry. Between July and October only a few scattered showers had taken place and these did not produce much water at all. Trees drooped in the unrelenting summer sun; grass and leaves dried out. By October, as many as six fires were breaking out every day. On Saturday the seventh, the night before the

Great Fire, a blaze destroyed four blocks and took over sixteen hours to control. What made Sunday the eighth different and particularly dangerous was the steady wind blowing in from the southwest.

(7) It was this gusting, swirling wind that drove the flames from the O'Learys' barn into neighboring yards. To the east, a fence and shed of James Dalton's went up in flames; to the west, a barn smoldered for a few minutes, then flared up into a thousand yellow-orange fingers.

1. Reread this sentence from paragraph 5 of the passage:

The answer was to make the roads and sidewalks out of wood and elevate them above the waterline, in some places by several feet.

Which two phrases in the sentence best help the reader determine the meaning of the word "elevate"?

    A. "The answer was"
    B. "to make the roads and sidewalks"

    C. "out of wood"
    D. "above the waterline"
    E. "in some places"
    F. "by several feet"

2. What was the main reason that the middle class and poorer districts in Chicago burned down more easily than other districts in the city did?

A. The buildings in these districts had wooden decorations painted to look like marble or stone.

B. The roofs of the buildings in these districts were made of materials that burned easily.

C. These districts contained many wooden buildings that were built closely together.

D. These districts were crossed by miles of pine-block streets and wooden sidewalks.

3. According to the passage, how did the location of the businesses affect the Great Fire?

A. The location of the businesses was one reason "the situation was worst in the middle-class and poorer districts."

B. The location of the businesses provided some of "the links between richer and poorer sections" of the city.

C. The location of the businesses meant that the "wealthier districts were by no means free of fire hazards."

D. The location of the businesses helped bind "the 23,000 acres of the city in a highly combustible knot."

4. How do the details in paragraphs 3 and 4 about the poor, middle-class, and wealthier neighborhoods contribute to the development of the central ideas of the passage?

A. The paragraphs support the idea that the fire spread widely because of the amount of wood in all three areas.

B. The paragraphs support the idea that wood was the most readily available resource because of the number of trees in the area.

C. The paragraphs support the idea that long ago people were unaware of the importance of well- constructed buildings.

D. The paragraphs support the idea that Chicago was different from other large cities during that time.

5. This question has two parts. Answer Part A and then answer Part B.

Part A: Which statement below best summarizes the central idea of this passage?

   A. The Great Fire of Chicago was one of the most damaging fires in American history.

   B. The Great Fire of Chicago quickly got out of control in some neighborhoods but not others.

   C. Chicago firefighters could not put out the fire even though many people tried to help.

   D. Chicago provided almost perfect conditions for a widespread and damaging fire.

Part B: Which sentence from the passage provides the best support for the correct answer in Part A?

   A. "Neighbors rushed from their homes, many carrying buckets or pots of water."

   B. "Chicago in 1871 was a city ready to burn."

   C. "The situation was worst in the middle-class and poorer districts."

   D. "Fires were common in all cities back then, and Chicago was no exception."

6. Choose two details that show why Chicago burned when it did, and copy each detail into one of the empty boxes.

A. Neighbors rushed from their homes, many carrying buckets or pots of water.

B. What made Sunday the eighth different and particularly dangerous was the steady wind blowing in from the southwest.

C. Lot sizes were small, and owners usually filled them up with cottages, barns, sheds, and outhouses—all made of fast-burning wood, naturally.

D. Chicago had been built largely on soggy marshland that flooded every time it rained.

E. Between July and October only a few scattered showers had taken place and these did not produce much water at all.

F. The sound of music and merrymaking stopped abruptly, replaced by the shout of "FIRE!" It would be a warning cry heard thousands of times during the next thirty-one hours.

7. This question has two parts. Answer Part A and then answer Part B.

Part A: Based on The Great Fire, which statement is true about conditions in Chicago in 1870-1871?

    A. Land for building homes was abundant in Chicago.

    B. Firefighters in Chicago were inexperienced.

    C. The growth of Chicago was being carefully planned.

    D. A fire was likely to occur almost every day in Chicago.

Part B: Which sentence from the passage provides the best support for the correct answer in Part A?

    A. "Lot sizes were small, and owners usually filled them up with cottages, barns, sheds, and outhouses—all made of fast-burning wood, naturally."

    B. "As the years passed and the town developed, a quick solution to the water and mud problem was needed."

    C. "Records for 1870 indicate that fire-fighting companies responded to nearly 600 alarms."

    D. "On Saturday the seventh, the night before the Great Fire, a blaze destroyed four blocks and took over sixteen hours to control."

KEY: 6th Grade Comprehension Passage VII

Excerpt from *The Great Fire* by Jim Murphy

	Item Type	Correct Answer		Standard
1	Multiple Select	D, F	1	CCSS.ELA-Literacy RI 6.4
2	Multiple Choice	C	1	CCSS.ELA-Literacy. RI 6.8
3	Multiple Choice	A	1	CCSS.ELA-Literacy. RI 6.3
4	Multiple Choice	A	1	CCSS.ELA-Literacy. RI 6.5
5	Part A, B	Part A: D Part B: B	1	CCSS.ELA-Literacy. RI 6.2
6	Multiple Select	B, E	1	CCSS.ELA-Literacy. RI 6.3
7	Part A, B	Part A: D Part B: C	1	CCSS.ELA-Literacy RI 6.2

"The Making of a Scientist" by Richard Feynman

Raised in an era when expectations for boys were different than those of girls, Dr. Feynman explains his original interest in science.

1   Before I was born, my father told my mother, "If it's a boy, he's going to be a scientist." When I was just a little kid, very small in a highchair, my father brought home a lot of little bathroom tiles—seconds—of different colors. We played with them, my father setting them up vertically on my highchair like dominoes, and I would push one end so they would all go down.

2   Then after a while, I'd help set them up. Pretty soon, we're setting them up in a more complicated way: two white tiles and a blue tile, two white tiles and a blue tile, and so on. When my mother saw that she said, "Leave the poor child alone. If he wants to put a blue tile, let him put a blue tile."

3   But my father said, "No, I want to show him what patterns are like and how interesting they are. It's a kind of elementary mathematics." So he started very early to tell me about the world and how interesting it is.

4   We had the Encyclopaedia Britannica at home. When I was a small boy he used to sit me on his lap and read to me from the Britannica. We would be reading, say, about dinosaurs. It would be talking about the Tyrannosaurus rex, and it would say something like, "This dinosaur is twenty-five feet high and its head is six feet across."

5   My father would stop reading and say, "Now, let's see what that means. That would mean that if he stood in our front yard, he would be tall enough to put his head through our window up here." (We were on the second floor.) "But his head would be too wide to fit in the window." Everything he read to me he would translate as best he could into some reality.

6   It was very exciting and very, very interesting to think there were animals of such magnitude—and that they all died out, and that nobody knew why. I wasn't frightened that there would be one coming in my window as a consequence of this. But I learned from my father to translate: everything I read I try to figure out what it really means, what it's really saying.

7   We used to go to the Catskill Mountains, a place where people from New York City would go in the summer. The fathers would all return to New York to work during the week and come back only for the weekend. On weekends, my father would take me for walks in the woods and he'd tell me about interesting things that were going on in the woods. When the other mothers saw this, they thought it was wonderful and that the other fathers should take their sons for walks. They tried to work on them but they didn't get anywhere at first. They wanted my father to take all the kids, but he didn't want to because he had a special relationship with me. So it ended up that the other fathers had to take their children for walks the next weekend.

8   The next Monday, when the fathers were all back at work, we kids were playing in a field. One kid says to me, "See that bird? What kind of bird is that?"

9   I said, "I haven't the slightest idea what kind of a bird it is."

10   He says, "It's a brown-throated thrush. Your father doesn't teach you anything!"

11   But it was the opposite. He had already taught me: "See that bird?" he says. "It's a Spencer's warbler." (I knew he didn't know the real name.) "Well, in Italian, it's a Chutto Lapittida. In Portuguese it's a Bom da Peida. In Chinese, it's a Chung-long-tah, and in Japanese, it's a Katano Tekeda. You can know the name of the bird in all the languages of the world, but when you're finished, you'll know absolutely nothing whatever about the bird. You'll only know about humans in different places, and what they call the bird. So let's look at the bird and see what it's doing—that's what counts." (I learned very early the difference between knowing the name of something and knowing something.)

12   He said, "For example, look: the bird pecks at its feathers all the time. See it walking around, pecking at its feathers?"

13   "Yeah."

14   He says, "Why do you think birds peck at their feathers?"

15   I said, "Well, maybe they mess up their feathers when they fly, so they're pecking them in order to straighten them out."

16   "All right," he says. "If that were the case, then they would peck a lot just after they've been flying. Then, after they've been on the ground a while, they wouldn't peck so much anymore—you know what I mean?"

17   "Yeah."

18   He says, "Let's look and see if they peck more just after they land."

19   It wasn't hard to tell: there was not much difference between the birds that had been walking around a bit and those that had just landed. So I said, "I give up. Why does a bird peck at its feathers?"

20   "Because there are lice bothering it," he says. "The lice eat flakes of protein that come off its feathers."

21   He continued, "Each louse has some waxy stuff on its legs, and little mites eat that. The mites don't digest it perfectly, so they emit from their rear ends a sugarlike material, in which bacteria grow."

22   Finally he says, "So you see, everywhere there's a source of food, there's some form of life that finds it."

23   Now, I knew that it may not have been exactly a louse, that it might not be exactly true that the louse's legs have mites. That story was probably incorrect in detail, but what he was telling me was right in principle.

24   Not having experience with many fathers, I didn't realize how remarkable he was. How did he learn the deep principles of science and the love of it, what's behind it, and why it's worth doing? I never really asked him, because I just assumed that those were things that fathers knew.

25   My father taught me to notice things. One day, I was playing with an "express wagon," a little wagon with a railing around it. It had a ball in it, and when I pulled the wagon, I noticed something about the way the ball moved. I went to my father and said, "Say, Pop, I noticed something. When I pull the wagon, the ball rolls to the back of the wagon. And when I'm pulling it along and I suddenly stop, the ball rolls to the front of the wagon. Why is that?"

26   "That, nobody knows," he said. "The general principle is that things which are moving tend to keep on moving, and things which are standing still tend to stand still, unless you push them hard. This tendency is called 'inertia,' but nobody knows why it's true." Now, that's a deep understanding. He didn't just give me the name.

27   He went on to say, "If you look from the side, you'll see that it's the back of the wagon that you're pulling against the ball, and the ball stands still. As a matter of fact, from the friction it starts to move forward a little bit in relation to the ground. It doesn't move back."

28   I ran back to the little wagon and set the ball up again and pulled the wagon. Looking sideways, I saw that indeed he was right. Relative to the sidewalk, it moved forward a little bit.

29   That's the way I was educated by my father, with those kinds of examples and discussions: no pressure—just lovely, interesting discussions. It has motivated me for the rest of my life, and makes me interested in all the sciences. (It just happens I do physics better.)

30   I've been caught, so to speak—like someone who was given something wonderful when he was a child, and he's always looking for it again. I'm always looking, like a child, for the wonders I know I'm going to find—maybe not every time, but every once in a while.

1. The following question has two parts. Answer Part A and then answer Part B.

Part A: How do paragraphs 1–3 of this passage help the reader understand the rest of the passage?

A. by explaining why Feynman's father loved science

B. by describing how Feynman's father preferred to play games with his son rather than teach him

C. by introducing how Feynman's father taught him through observation

D. by showing that Feynman's father disagreed with his mother on how to raise children

Part B: Which sentence provides the best evidence for the answer to Part A?

A. "Before I was born, my father told my mother, 'If it's a boy, he's going to be a scientist.'"
B. "We played with them, my father setting them up vertically on my highchair like dominoes, and I would push one end so they would all go down."
C. "If he wants to put a blue tile, let him put a blue tile."
D. "So he started very early to tell me about the world and how interesting it is."

2. In paragraphs 8–10 of the text, Feynman recalls a conversation he and another boy had about a bird. How do these paragraphs contribute to the development of the central idea of the text?

A. The paragraphs present important information Feynman learned about the bird.

B. The paragraphs explain why all the fathers took their sons on walks in the woods.

C. The paragraphs show that the other boy knew more about the bird than Feynman did.

D. The paragraphs highlight the differences in what the fathers thought was important to know.

3. The following question has two parts. Answer Part A and then answer Part B.

Part A: In paragraph 23 of the text, what is the meaning of the word principle?

A. a kind manner

B. a general rule

C. a confusing idea

D. an entertaining story

Part B: Which other incident in the passage best shows Feynman's father talking about a principle?

    A. Feynman's father bringing home colored tiles

    B. Feynman's father reading to his son from an encyclopedia

    C. Feynman's father telling him some foreign names for the bird they see

    D. Feynman's father explaining inertia based on the movement of the ball in the wagon

4. Which two details from the passage best explain the methods Feynman's father used to encourage his son to be interested in science?

    A. "Before I was born, my father told my mother, 'If it's a boy, he's going to be a scientist.'"

    B. "I never really asked him, because I just assumed that those were things fathers knew."

    C. "My father taught me to notice things."

    D. "'This tendency is called inertia.'"

    E. "He didn't just give me the name."

    F. "Looking sideways, I saw that indeed he was right."

5. The following question has two parts. Answer Part A and then answer Part B.

Part A: With which statement would Feynman most likely agree?

   A. Books are necessary to learn about science.

   B. Parents should allow children to study what they want.

   C. There is a difference between knowing about something and truly understanding it.

   D. Talking to someone about science makes it more interesting.

Part B: Which sentence provides the best evidence for the answer to Part A?

   A. "When my mother saw that she said, 'Leave the poor child alone.'"

   B. "When I was a small boy he used to sit me on his lap and read to me from the Britannica."

   C. "My father would stop reading and say, 'Now, let's see what that means.'"

   D. "When the other mothers saw this, they thought it was wonderful and that the other fathers should take their sons for walks."

6. How does the story of the bathroom tiles fit into the overall structure of the passage?

   A. It introduces a chronological account of the main events in the author's childhood.

   B. It introduces a cause and effect structure by providing the primary reason for the events that follow.

   C. It introduces a structure of comparison and contrast by showing an early event that is different from later events.

   D. It introduces one of the four main examples that the author uses to illustrate his central ideas.

7. The title of this passage is "The Making of a Scientist." Although the passage explains some of the science lessons Feynman's father taught him, it could be argued that the life lessons Feynman learned are more valuable. Chooses two pieces of evidence that display life lessons his father taught him about life.

A. "I learned very early the difference between knowing the name of something and knowing something." (Paragraph 11)

B. "The next Monday, when the fathers were all back at work, we kids were playing in a field." (Paragraph 8)

C. "Before I was born, my father told my mother, 'If it's a boy, he's going to be a scientist.'" (Paragraph 1)

D. "But I learned from my father to translate. Everything I read I try to figure out what it really means, what it is really saying." (Paragraph 6)

E. "I've been caught, so to speak—like someone who was given something wonderful when he was a child, and he's always looking for it again." (Paragraph 30).

KEY: 6th Grade Comprehension Passage VIII

"The Making of a Scientist" by Richard Feynman

	Item Type	Correct Answer		Standard
1	Part A/Part B	Part A: C Part B: D	1	CCSS.ELA-Literacy RI 6.5
2	Multiple Choice	D	1	CCSS.ELA-Literacy. RI 6.5
3	Part A/Part B	Part A: B Part B: D	1	CCSS.ELA-Literacy. RI 6.4
4	Multiple Select	C, E	1	CCSS.ELA-Literacy. RI 6.8
5	Part A, B	Part A: C Part B: C	1	CCSS.ELA-Literacy. RI 6.6
6	Multiple Choice	D	1	CCSS.ELA-Literacy. RI 6.3
7	Multiple Select	A, D	1	CCSS.ELA-Literacy RI 6.8

	MAFS.6.EE.2.8 – FSA PRACTICE
1	According to historical records, the highest price for regular gas in Florida over the last ten years was just under $4.06. Write an inequality to represent Florida's gas prices over the last ten years. Write your answer in the box below. [ ]
2	Draw a number line to represent the inequality $p > -3$.
3	At an amusement park, the height, h, that a person must be in order to ride the roller coaster is given by the inequality $h > 48$ inches. **Part A** Label and graph this inequality. **Part B** Mark yes or no next to the values from the list below to show if it satisfies the above inequality.
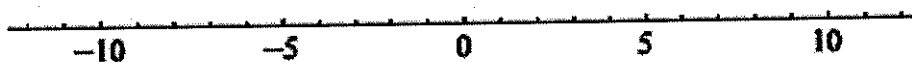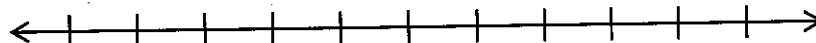
Value	Yes	No	Value	Yes	No
47.9 inches	☐	☐	$50\frac{3}{4}$ inches	☐	☐
$48\frac{1}{4}$ inches	☐	☐	48 inches	☐	☐
4.899 inches	☐	☐	$\frac{48}{2}$ inches	☐	☐
48.00 inches	☐	☐	$40\frac{8}{10}$ inches	☐	☐

MAFS.6.EE.3.9	
1	The graph shows the number of teaspoons of water, y, that have dripped from a leaky faucet at the end of x minutes.

Leaky Faucet
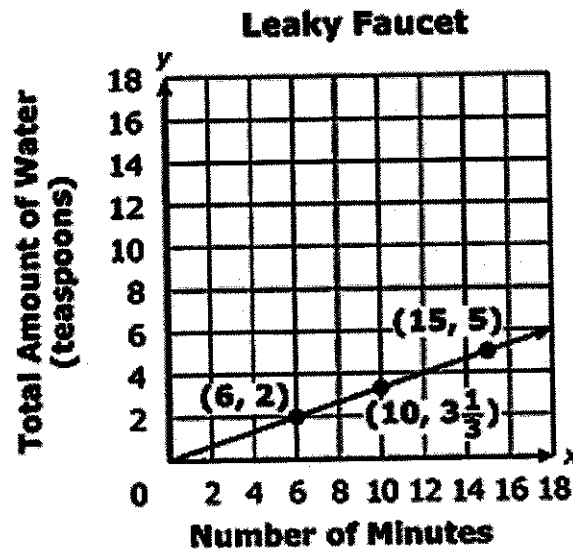
Which equation represents the relationship between x and y shown in the graph?

ⓐ $y = 3x$

ⓑ $y = x - 3$

ⓒ $y = \frac{1}{3}x$

ⓓ $y = x + 3$

A school band performed a concert on four different days. The band sold tickets and snacks each day of the concert for a fundraiser. The first table shows the number of tickets sold and the amount of money collected from ticket sales. The second table shows the number of snacks sold and the amount of money collected from snack sales.

Concert Ticket Sales

Day	Number of Tickets Sold	Amount Collected (dollars)
1	50	275.00
2	47	258.50
3	62	341.00
4	75	412.50

Snack Sales

Day	Number of Snacks Sold	Amount collected (dollars)
1	43	53.75
2	36	45.00
3	60	75.00
4	65	81.25

Part A

If each snack costs the same price, what is the price per snack?

Enter your answer in the box.

$ _____

Part B

Write an equation that can be used to find y, the amount of money collected for selling x concert tickets.

Enter your equation in the box.

3	A coffee storage bin contains 1500 grams of coffee beans. To make a cup of coffee, n grams of coffee beans are removed. **Part A** Write an equation to model the relationship between the quantity of coffee beans removed, n, and the quantity of coffee beans remaining in the storage bin, q. Write your answer in the box below. **Part B** Identify the indedendent and dependent variables in your equation.
4	Lisa is going on a long-distance bike ride with her friends. They will ride at a rate of 10 miles every hour. Write an equation that relates the distance, d, that Lisa travels to the number of hours, h, she has ridden. Write your answer in the box below.

	MAFS.6.EE.3.9 – FSA PRACTICE
1	A new roller coaster has three seats in each row. The following shows how the number of seats, y, changes as the number of rows, x, changes. **New Roller Coaster Seating** **Number of Rows** Which equation shows this relationship? A. $3y = x$ B. $y = x + 3$ C. $y = 3x$ D. $y + 3 = x$
2	A manual coffee grinder holds 200 grams of coffee and grinds 2 grams every time the crank is turned. **Part A** Write an equation to show the relationship between the number of times the crank is turned, t, and the amount of coffee remaining, c. Write your answer in the box below. **Part B** Identify the indedendent and dependent variables in your equation. Write your answer in the box below.
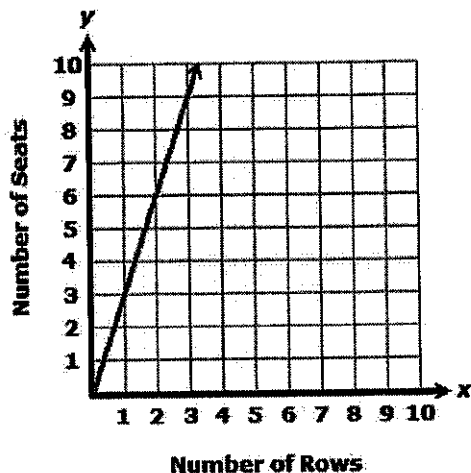
Ms. Roberts makes bouquets of flowers. Every bouquet she makes, she includes eight flowers. The table below shows the number of flowers, f, that Ms. Roberts uses to make b bouquets. Fill in the missing values in the table.

Number of Bouquets, b	Number of Flowers, f
4	☐
☐	64
☐	96

3

Ms. Roberts continued to make bouquets today. She used 224 flowers today to make ☐ bouquets.

	MAFS.6.SP.1.1
1	Which question is a statistical question? ● A. How tall is the oak tree? ● B. How much did the tree grow in one year? ● C. What are the heights of the oak trees in the schoolyard? ● D. What is the difference in height between the oak tree and the pine tree?
2	Which of the following are statistical questions? Select all that apply. ☐ How many days are in March? ☐ How old is your dog? ☐ How old are the dogs on this street? ☐ What percent of people like watermelons? ☐ Do you like watermelons? ☐ How many bricks are in this wall? ☐ What was the highest temperature today in town?
3	The Johnson family is gathering information about different neighborhoods they are considering moving to. Things they are considering are schools, parks, the number of houses, and the type of yards. Which of the following are statistical questions that can be answered by the data gathered by the Johnson family? ☐ How many houses are in each neighborhood? ☐ What is the size of the largest yard in all the neighborhoods? ☐ How many students are enrolled in the smallest school? ☐ How many schools are in each neighborhood? ☐ How many houses have fences around the backyards?

	MAFS.6.SP.1.1 – FSA PRACTICE
1	Which of the following is a statistical question? ○ A. How many players are on Greg's football team? ○ B. What volume of milk is used to make cupcakes according to Paula's cookbook? ○ C. How many students attend Natasha's school? ○ D. What are the checking account balances of the shoppers in a grocery store?
2	Last night, Jasmine and her family went out for dinner. The questions below came up on their way to the restaurant or during the meal. Decide whether or not each question is a statistical question. Select all that apply. ☐ How far are we from the restaurant? ☐ How long will it be until we get there? ☐ Would you rather have burgers or pizza? ☐ How much should we leave for the tip? ☐ What was the most frequently ordered dish in the restaurant this evening? ☐ Did you like the pizza tonight? ☐ Which table's bill was the highest? ☐ How many people were sitting at each table this evening?
3	Which of the following is a statistical question? ○ A. What is the name of the shortest student in Tina's science class? ○ B. What are the eye colors of the students in Tina's science class? ○ C. What color are Tina's eyes? ○ D. What is the highest grade in Tina's science class?

	MAFS.6.SP.1.2

Use the below dot plot to answer questions 1 – 3.

A group of 15 math teachers were asked how many times per week they worked out. The results are displayed in the dot plot below.
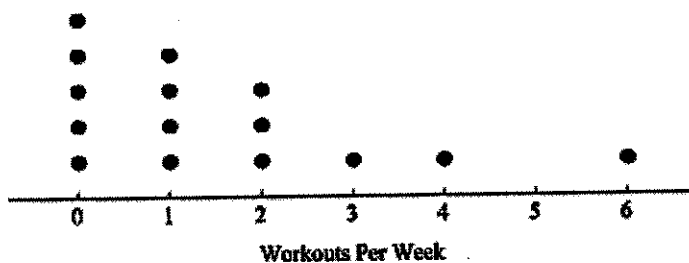
Workouts Per Week

1	What is the most common number of workouts per week? A. 0 B. 1 C. 2 D. 5
2	What part of the box plot represents the median of the data? A. 0 B. 1 C. 2 D. 5
3	What part of the box plot represents the spread of the data? A. 1 B. 2 C. 3 D. 6

MAFS.6.SP.1.2 – FSA PRACTICE

1

Test Grades
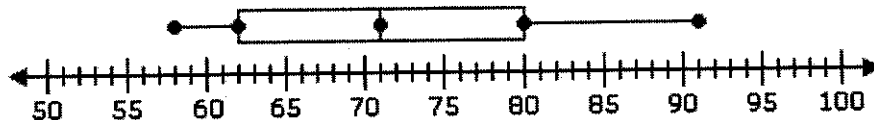
The quiz grades of 10 different students were used to create the box plot above. Which of the following represents the median of the set of grades?

- ○ A. 70
- ○ B. 71
- ○ C. 80
- ○ D. 62

2

The dot plot below shows how many apple slices each girl at Kayla's party ate.
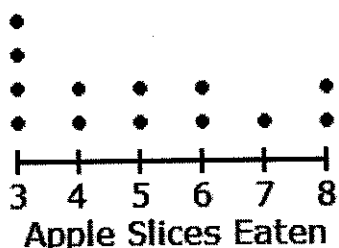
Apple Slices Eaten

Which of the following represents the mean of the amount of apple slices eaten?

- A. 1.6
- B. 65
- C. 5
- D. 6.5

The histogram shows the ages of relatives'.

Relatives' Ages
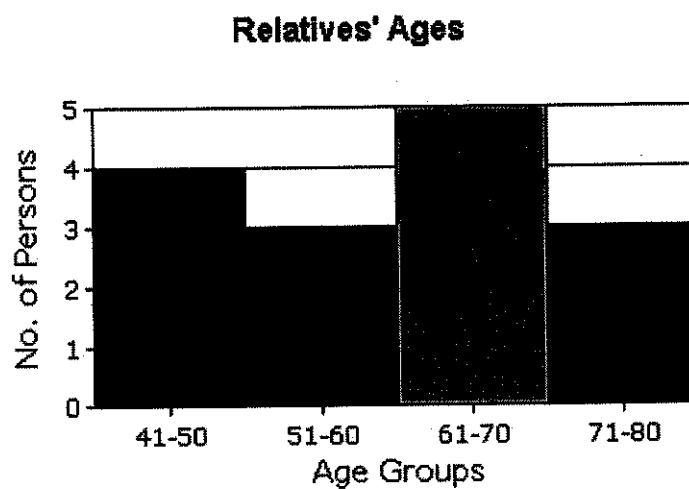
Select the correct choice that shows where the range of most of the ages is displayed.

A. 41 – 50

B. 51 – 60

C. 61 – 70

D. 71 – 80

	MAFS.6.SP.1.3
	Use the below dot plot to answer questions 1 – 4. After a company celebrated its ten year anniversary, the president of the company wanted to know how long employees have been with the company. Human resources provided the president with the box plot below. Use the dot plot to determine the best measures for the data. **Years of Service** 0 1 2 3 4 5 6 7 8 9 10
1	Based on the information in the dot plot, The best measure of center of the years of service is? A. mean B. median C. mean absolute deviation D. interquartile range
2	Based on the information in the dot plot, the best measure of variability of the years of service is? A. mean B. median C. mean absolute deviation D. interquartile range
3	Based on the information in the dot plot, the number that best summarizes the years of service is? A. 0 B. 1 C. 2 D. 4
4	Based on the data, the number that best describes how the data varies is? A. 0 B. 1 C. 2 D. 4
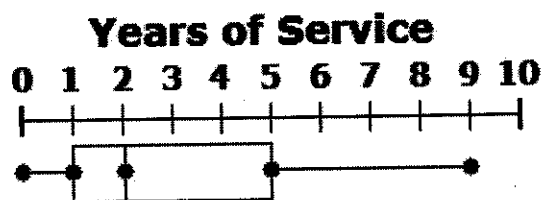
	MAFS.6.SP.1.3 – FSA PRACTICE

Use the below dot plot to answer questions 1 – 4.

In game one of a high school basketball playoff, the number of points each participating player scored were recorded. Use the dot plot below to determine the best measures for the data.

Number of Players (y-axis)
Number of Points in Game One (x-axis): 2 4 6 8 10 12 14 16 18 20 22 24
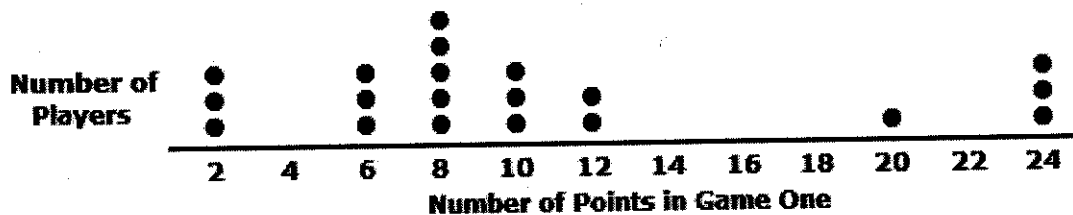
1	Based on the information in the dot plot, the best measure of center of the points scored is? E. mean F. median G. mean absolute deviation H. interquartile range
2	Based on the information in the dot plot, the best measure of variability of the points scored is? E. mean F. median G. mean absolute deviation H. interquartile range
3	Based on the information in the dot plot, the number that best summarizes the points scored is? E. 5.3 F. 6 G. 8 H. 10.5
4	Based on the data, the number that best describes how the data varies is? E. 5.3 F. 6 G. 8 H. 10.5

MAFS.6.SP.2.4

This table shows the ages of 20 visitors at a library.

15	27	53	9	48
3	56	12	10	15
18	15	2	31	20
21	33	6	52	56

Create a histogram that represents the data. Draw your histogram bars to the appropriate height.

Library Visitors
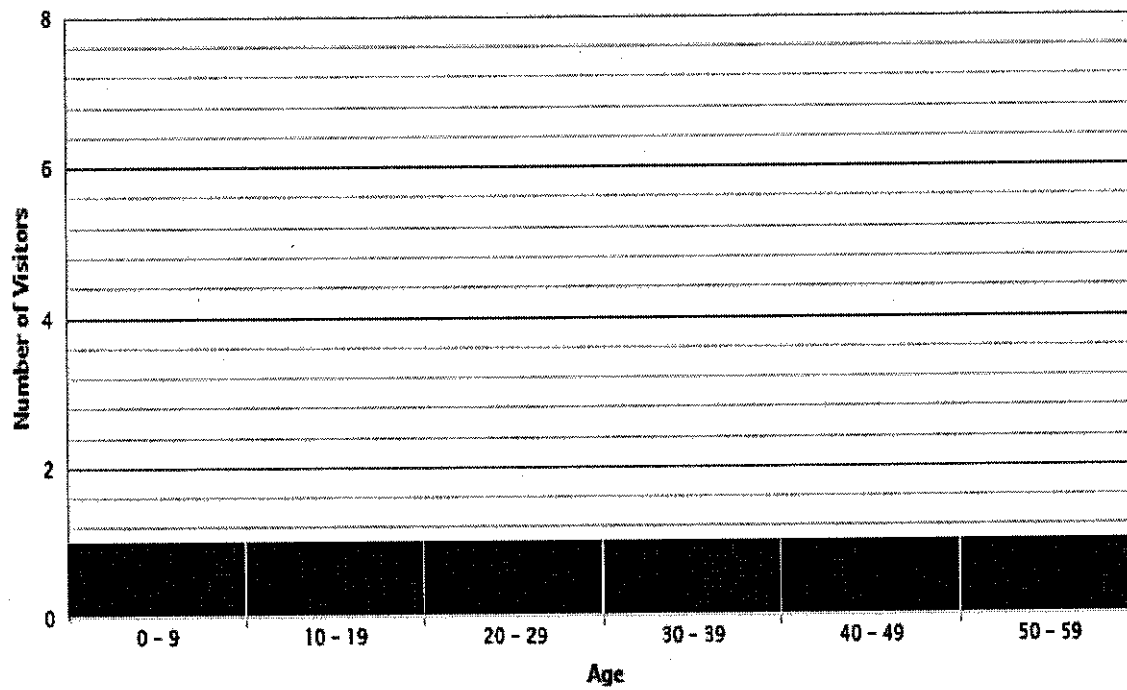
1

A bakery kept track of how many days they made different numbers of desserts, as shown on the table below.

Desserts	
Number of Desserts	Number of Days
1	5
2	6
3	2
4	8
5	6

Desserts	
Number of Desserts	Number of Days
6	8
7	2
8	4
9	3
10	3

Which dot plot best displays the data in the table?

W.

X.

Y.

Z.

O A. W

O B. X

O C. Z
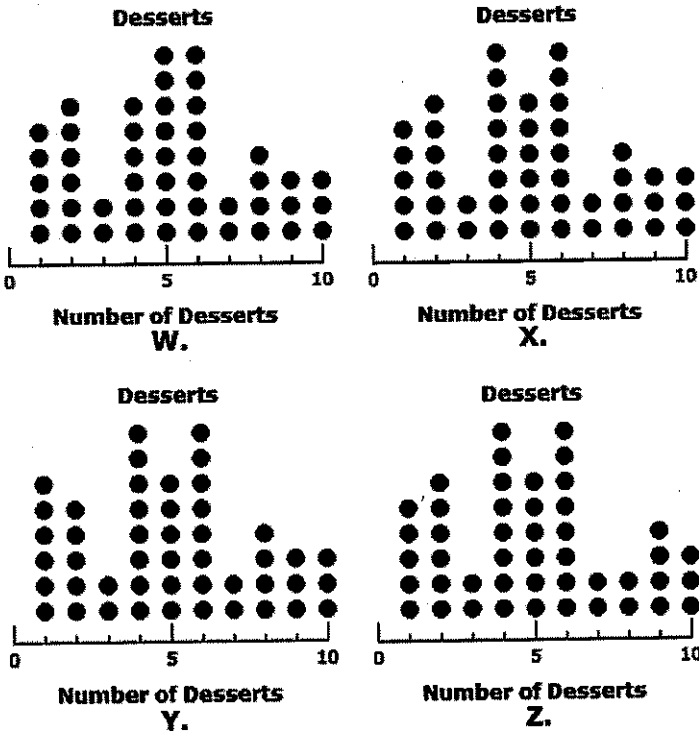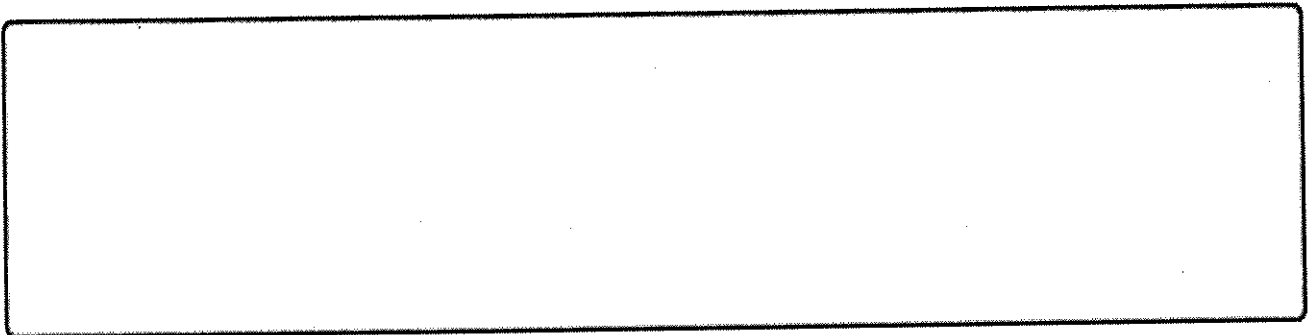
O D. Y

Each of the 20 students in Mr. Arlington's class timed how long it took them to solve a math problem. Their times (in minutes) are listed below:

Student	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Time (minutes)	3	5	4	6	4	8	5	4	9	5	3	4	7	5	8	6	3	6	5	7

3

Create a dot plot represent Mr. Arlington's class data.

MAFS.6.SP.2.4 - FSA PRACTICE

1

A baby furniture store has a number of different dressers. The table below shows the number of dressers and their heights. Which histogram matches the table?

Height (inches)	31–40	41–50	51–60	61–70
Number of Dressers	6	3	4	3

O A.

Heights of Dressers
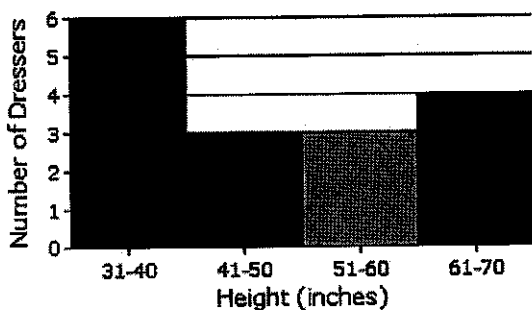
O B.

Heights of Dressers
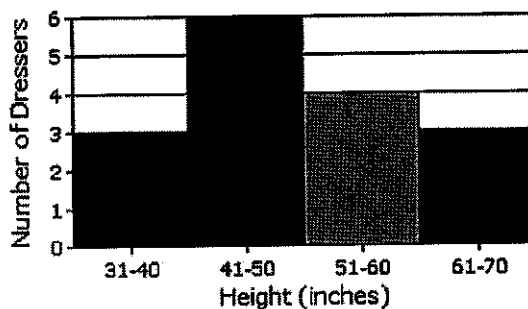
O C.

Heights of Dressers
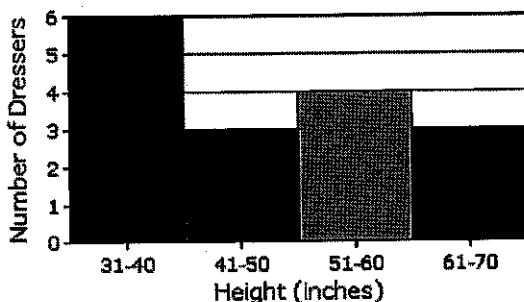
O D.

Heights of Dressers

2
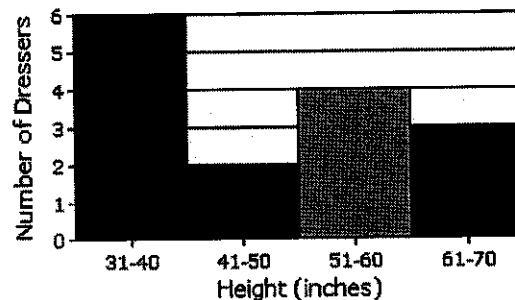
Data from the International Shark Attack File on the number of shark attacks in Florida is given in the table below.

Shark Attacks in Florida (2001-2013)

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Number of Attacks	34	29	29	12	17	21	31	28	19	14	11	27	23

Create a box plot to represent International Shark Attack File's data.

The Disney Store has a number of different souvenirs. The table below shows the number of souvenirs and their price. Which histogram matches the table?

Price	$1-$10	$11-$20	$21-$30	$31-$40
Number of Souvenirs	10	8	4	6

○ A.

Souvenir Prices

○ B.

Souvenir Prices

○ C.

Souvenir Prices

○ D.

Souvenir Prices

3
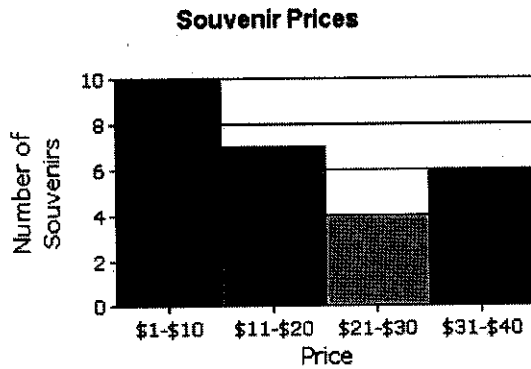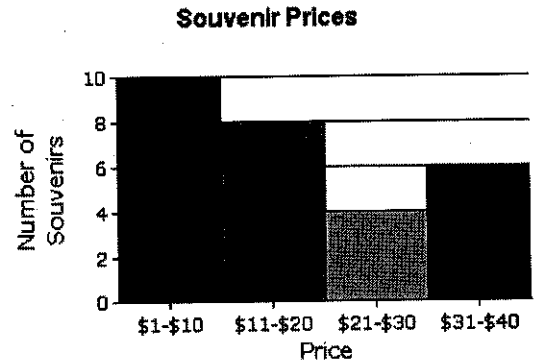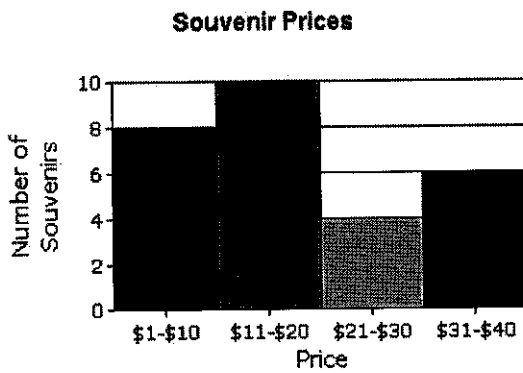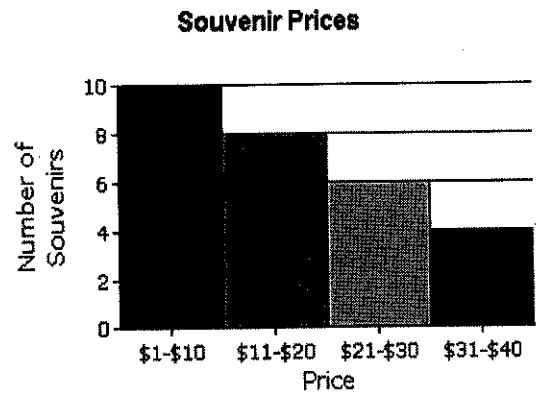
	MAFS.6.SP.2.5a, b, c, d
1	The adults of a certain type of insect have a mean length of 0.6 inch. The students in a science class measured 10 insects of this type. The lengths are shown in the line plot.

Insect Lengths

Length (inches)
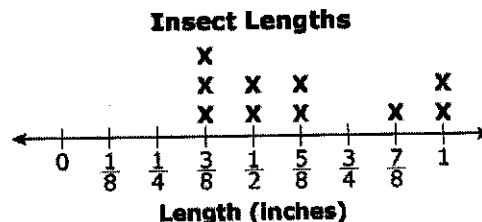
Part A
How many of the insects have a length that is greater than 0.6 inch?

Enter your answer in the box.

Part B
The mean of the lengths of the insects measured by the science class is [Choose],
which is [Choose] than the mean length of adults of that type.

greater
less

3/8
1/2
5/8
3/4

2	The dot plot below shows the number of days with different temperatures last month.

68 70 72 74 76 78 80 82 84 86 88 90 92

Temperature (in Degrees Fahrenheit)
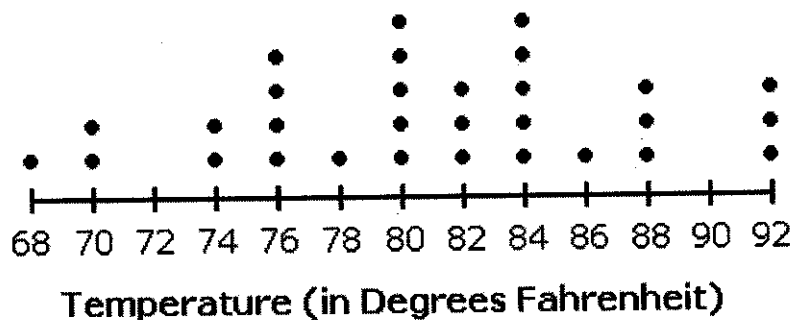
What is the mean of the data set shown?

○ A. 81

○ B. 2,430

○ C. 5.13

○ D. 8

3	The dot plot below shows how many customers purchased different numbers of shirts at a sale last weekend.

Shirts Purchased
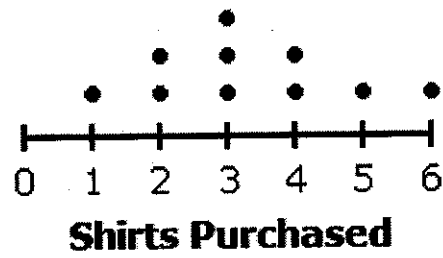
What is the interquartile range of the data set shown?

- A. 6
- B. 2
- C. 3
- D. 5

	MAFS.6.SP.2.5a, b, c, d – FSA PRACTICE
1	**Commuting Distances *(in miles)*** The commuting distances in miles of 10 employees were used to make the box plot shown above. Which of the following is the median of the set of commuting distances? ○ A. 27.5 ○ B. 30 ○ C. 28.5 ○ D. 25
2	The heights in inches of seven basketball players are listed below. 72, 74, 80, 86, 78, 85, 83 What is the interquartile range of the heights? ○ A. 10 ○ B. 81 ○ C. 11 ○ D. 12
3	Trey recorded the number of ounces of water he drank each day in the histogram below. **Trey's Daily Water Drinking** Which of the following would be the best measure of variability? ○ A. mean absolute deviation ○ B. median ○ C. mean ○ D. interquartile range
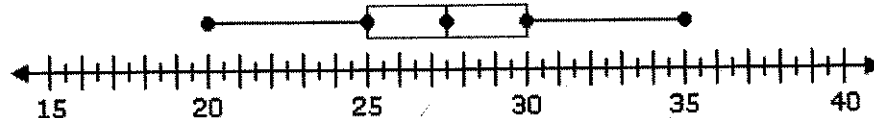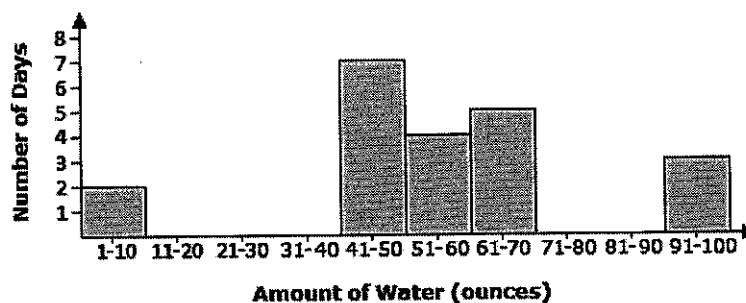
6th Grade

MAAP Tested Domains

Performance Tasks

Task 1:

What is N?

N is a counting number. The mean and median are also counting numbers.

| 7 | 3 | 6 | 10 | 1 | 6 | N |

Find a value for N so that the mean and median are the same.

_____

Explain your thinking.

Task 2:

Switch a number from Group A with a number from Group B so that both groups have the same mean.

Group A	7	3	5	6	
Group B	8	3	4	5	4

I switched _____from Group A with _____from Group B.

The mean in each group is _____.

Explain how you knew which numbers to switch?

Task 3:

The following table shows the number of points scored by a basketball team in one season.

Date	1/4	1/7	1/11	1/14	1/19	1/23	1/28	2/2	2/5	2/9	2/12	2/18	2/23	2/28
Points	73	63	77	91	64	73	83	81	41	73	65	83	66	75

What is the outlier of the points scored by the basketball team?

_____

Define an outlier of data.

How does the outlier impact the mean of the data (in this example)?

Task 4:

Long Jump Distances

Below is a list of distances from the Long Jump in Physical Education class. All distances are in inches.

25, 22, 22, 23, 24, 28, 29, 22, 25, 25, 22, 25, 30, 21, 23, 24,

Part 1:
Identify the median of your data set. Identify the range of your data.

Part 2:
How do the median and the range found in Part 2 help you describe these data? What does each value tell you about this data?

Task 5:

The following table shows the number of points scored by a basketball team in one season.

Date	1/4	1/7	1/11	1/14	1/19	1/23	1/28	2/2	2/5	2/9	2/12	2/18	2/23	2/28
Points	73	63	77	91	64	73	83	81	41	73	65	83	66	75

A. What is the range of scores?

B. What is the mean of the data (rounded to the nearest whole number)?

C. What is the median score for the team?

D. What is the mode of the data?

Task 6:

The numbers show how many "Apps" were downloaded by each 5th grader.

37	42	38	37	40	44	40	38	41

A. What is the median of the data?

B. What is the mean of the data (rounded to the nearest whole number)?

C. Are there any outliers in the data set? If yes, list them below.

D. Is the median and mean close or far apart in value? Based on the data, explain why that is?

Task 7:

The local veterinary office kept data on the weight of the dogs that come into the office. The table below shows the data collected by the veterinary office.

Monday	Tuesday	Wednesday	Thursday	Friday
4	4	60	15	25
6	30	50	25	10
3	15	55	20	15
5	40	65	25	20
9	45	45	15	
4	30	50	20	
5	25	55	25	

A. What is the mean of the weights of the dogs seen each day? (round to the nearest whole number)
   a. *Monday* –
   b. *Tuesday* –
   c. *Wednesday* –
   d. *Thursday* –
   e. *Friday* –

B. Do any of the days have an outlier in the data? If so, which day?

C. Based on the data, which day do you think the veterinary office closed early? Why do you choose this day?

D. Which day do you think the veterinarian only saw large dogs? Why did you choose this day?

E. Which day has the largest range in dog weights?

Task 8:

Bobbie is a sixth grader who competes in the 100-meter hurdles. In eight track meets during the season, she recorded the following times (to the nearest one hundredth of a second).

18.11, 31.23, 17.99, 18.25, 17.50, 35.55, 17.44, 17.85

    A. What is the mean of Bobbie's times for these track meets?

    B. What is the median of Bobbie's times?

    C. What information can you gather by comparison of the mean and median?

Task 1:

What is N?

N is a counting number. The mean and median are also counting numbers.

7   3   6   10   1   6   **N**

Find a value for **N** so that the mean and median are the same.

_____

Explain your thinking.

Answer:
N = 9

Check student answers for a clear explanation.
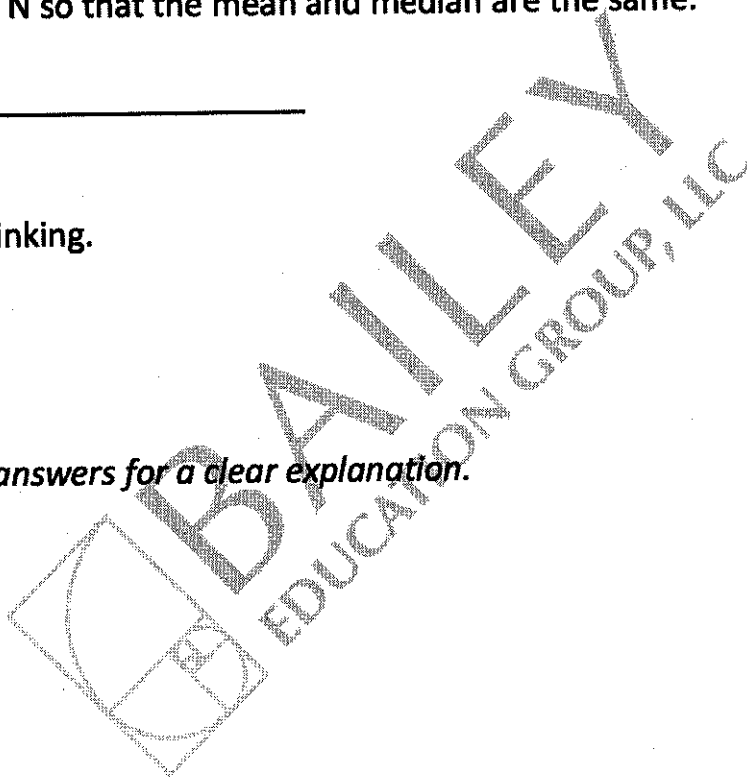
Task 2:

Switch a number from Group A with a number from Group B so that both groups have the same mean.

Group A	7	3	5	6	
Group B	8	3	4	5	4

I switched _____from Group A with _____from Group B.

The mean in each group is _____.

Explain how you knew which numbers to switch?

Answer:
Two options:

Switch 5 from group A with 4 from group B
OR
Switch 6 from Group A with 5 from Group B

Mean = 5

Check student answers for a clear explanation.

Task 3:

The following table shows the number of points scored by a basketball team in one season.

Date	1/4	1/7	1/11	1/14	1/19	1/23	1/28	2/2	2/5	2/9	2/12	2/18	2/23	2/28
Points	73	63	77	91	64	73	83	81	41	73	65	83	66	75

What is the outlier of the points scored by the basketball team?

_____

Define an outlier of data.

How does the outlier impact the mean of the data (in this example)?

Answer:
Outlier is 41 points scored in one game

Definitions of outlier will vary, but can include/variation of: an extreme value with few data points located near it

Because this data set only has one outlier on the low end (and not on both ends), it will push the mean downward slightly.

Task 4:

Long Jump Distances

Below is a list of distances from the Long Jump in Physical Education class. All distances are in inches.

25, 22, 22, 23, 24, 28, 29, 22, 25, 25, 22, 25, 30, 21, 23, 24,

Part 1:
Identify the median of your data set. Identify the range of your data.

Answer:
Part 1: The median is 24. The range is 9, from 21 to 30.

Part 2:
How do the median and the range found in Part 2 help you describe these data? What does each value tell you about this data?

Part 2: The median is a measure of center which helps to describe the center or middle of the data set. The range is a measure of variability, which means it helps to describe how spread out the data is from the lowest value to the highest value.

Task 5:

The following table shows the number of points scored by a basketball team in one season.

Date	1/4	1/7	1/11	1/14	1/19	1/23	1/28	2/2	2/5	2/9	2/12	2/18	2/23	2/28
Points	73	63	77	91	64	73	83	81	41	73	65	83	66	75

A. What is the range of scores?
   The range is 50

B. What is the mean of the data (rounded to the nearest whole number)?
   The mean is 72

C. What is the median score for the team?
   The median is 73

D. What is the mode of the data?
   The mode is 73

Task 6:

The numbers show how many "Apps" were downloaded by each 5th grader.

37	42	38	37	40	44	40	38	41

A. What is the median of the data?
The median of the data is 40.

B. What is the mean of the data (rounded to the nearest whole number)?
The mean of the data is 40.

C. Are there any outliers in the data set? If yes, list them below.
There are no outliers.

D. Is the median and mean close or far apart in value? Based on the data, explain why that is?
Answers may vary, but could include: because there are no outliers and the data is very centrally located, then the median and mean will be close in value

Task 7:

The local veterinary office kept data on the weight of the dogs that come into the office. The table below shows the data collected by the veterinary office.

Monday	Tuesday	Wednesday	Thursday	Friday
4	4	60	15	25
6	30	50	25	10
3	15	55	20	15
5	40	65	25	20
9	45	45	15	
4	30	50	20	
5	25	55	25	

A. What is the mean of the weights of the dogs seen each day? (round to the nearest whole number)
   a. *Monday – 5*
   b. *Tuesday – 27*
   c. *Wednesday – 54*
   d. *Thursday – 21*
   e. *Friday – 18*

B. Do any of the days have an outlier in the data? If so, which day?
   Yes. Tuesday has an outlier of 4.

C. Based on the data, which day do you think the veterinary office closed early? Why do you choose this day?
   Based on the data, there were fewer dogs seen on Friday, therefore the office may have closed early on Friday.

D. Which day do you think the veterinarian only saw large dogs? Why did you choose this day?
   Based on the data, all of the dog weights on Wednesday are greater than the other days. Therefore, Wednesday was devoted to seeing large dogs.

E. Which day has the largest range in dog weights?
   Tuesday has the largest range of dog weights. This is probably due to the outlier.

Task 8:

Bobbie is a sixth grader who competes in the 100-meter hurdles. In eight track meets during the season, she recorded the following times (to the nearest one hundredth of a second).

18.11, 31.23, 17.99, 18.25, 17.50, 35.55, 17.44, 17.85

   A. What is the mean of Bobbie's times for these track meets?
      Bobbie's mean time is 21.74 seconds.

   B. What is the median of Bobbie's times?
      The median of Bobbie's times is 18.05 seconds.

   C. What information can you gather by comparison of the mean and median?
      a. *Bobbie runs a race in an average time of 21.74 seconds.*
      b. *Bobbie finished half of her races in less than 18.05 seconds and half of the races in more than 18.05 seconds.*
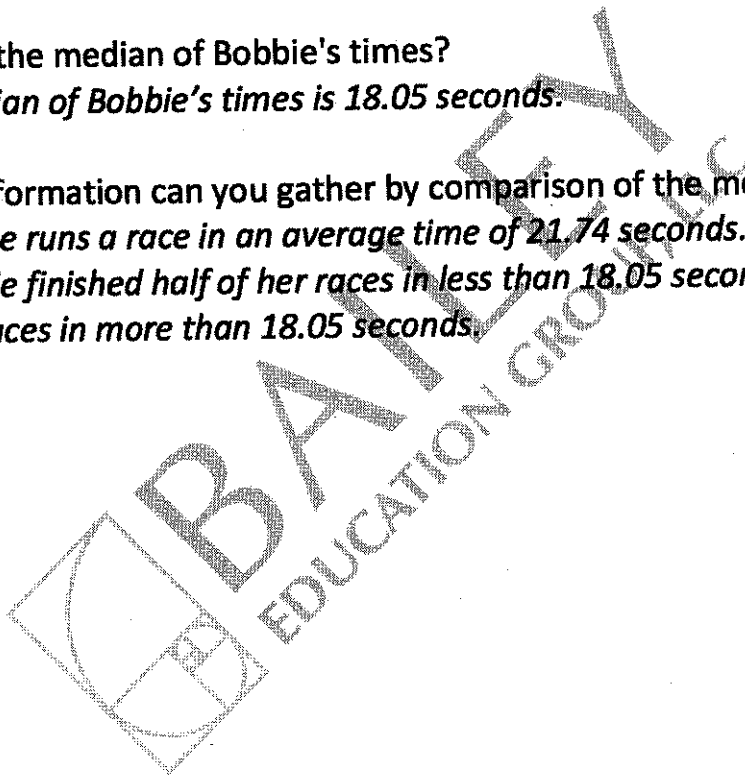
6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.NS.1.1
1	A
2	$\dfrac{5}{2}$ or equivalent **This question is a possible sample of an Equation Editor technology-enhanced question.**
3	14 plastic bags
4	$\dfrac{24}{25}$ or equivalent **This question is a possible sample of an Equation Editor Choice technology-enhanced question.**

	MAFS.6.NS.1.1 – Practice
1	$11\dfrac{1}{3}$ or equivalent
2	$2\dfrac{4}{5}$ or equivalent
3	13
4	$1\dfrac{13}{14}$ or equivalent
All questions in this section are possible samples of an Equation Editor technology-enhanced question.	

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.NS.2.2
1	432
2	23
3	582
	All questions in this section are possible samples of an Equation Editor technology-enhanced question.

	MAFS.6.NS.2.2 – Practice
1	41
2	170
3	508
	All questions in this section are possible samples of an Equation Editor technology-enhanced question.

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.NS.2.3
1	1.04
2	80.337
3	77.505
4	5.839

	MAFS.6.NS.2.3 - Practice
1	0.053
2	4.9794
3	1.787
4	5.2

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.NS.2.4
1	16
2	56
3	9
4	30
5	B
Questions 1 – 4 in this section are possible samples of an Open Item technology-enhanced question.	

	MAFS.6.NS.2.4 – Practice
1	6
2	24
3	4
4	35
5	D
Questions 1 – 4 in this section are possible samples of an Open Item technology-enhanced question.	

6th Grade –MAFS Spiral Review Packet – Answer Key

<table>
<tr><td colspan="2">MAFS.6.NS.3.5</td></tr>
<tr>
<td>1</td>
<td>

Scenario	Positive/Negative Integer
a withdrawal of fifty dollars	−15
a temperature three degrees below zero	−3
an elevation seventy feet above sea level	75

This question is a possible sample of a Table Item technology –enhanced item.
</td>
</tr>
<tr>
<td>2</td>
<td>

−12

This question is a possible sample of an Open Item technology –enhanced item.
</td>
</tr>
<tr><td>3</td><td>D</td></tr>
<tr><td>4</td><td>C</td></tr>
</table>
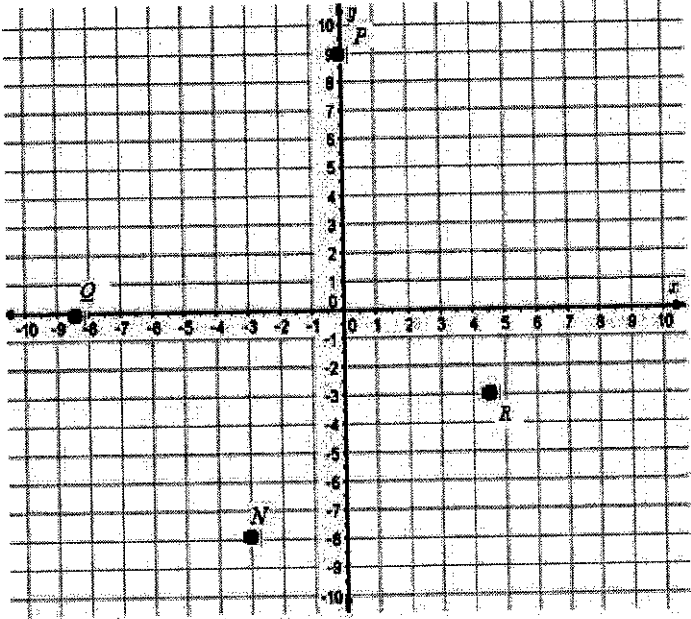
<table>
<tr><td colspan="2">MAFS.6.NS.3.5 – Practice</td></tr>
<tr><td>1</td><td>B</td></tr>
<tr><td>2</td><td>5</td></tr>
<tr><td>3</td><td>-15</td></tr>
<tr>
<td>4</td>
<td>

When interpreting the meaning of zero, a sample of what the student says:

- The ball ends up back at the same place it started after the same amount of gain and loss on the play.
- The player ran the ball forward but then got pushed back to the starting place.
- The ball was thrown but incomplete, so they gained zero yards on the play.
- The ball didn't move.
- There was no gain and no loss of yards.
</td>
</tr>
<tr><td colspan="2">**Questions 2 – 4 in this section are possible samples of an Open Item technology-enhanced question.**</td></tr>
</table>

	MAFS.6.NS.3.6a, b, c
1	C Sub-standard: a
2	-4 Sub-standard: c
3	Each mark on the number line represents one unit. Plot a point on the number line that represents the opposite of −5 units. Select a place on the number line to plot the point. -5 0 Sub-Standard: a This question is a possible sample of a Graphic Response Item Display (GRID) technology –enhanced item.**
4	(3, -2) Sub-standard: b ** This question is a possible sample of an Equation Editor technology-enhanced question.**
5	¯1 0 1 Sub-standard: c **This question is a possible sample of a Graphic Response Item Display (GRID) technology –enhanced item.**

	MAFS.6.NS.3.6a, b, c – Practice
1	 Sub-standard: c This question is a possible sample of a Graphic Response Item Display (GRID) technology –enhanced item.**
2	15 Sub-standard: a ** This question is a possible sample of an Equation Editor technology-enhanced question.**
3	Quadrant 1 Sub-standard: b
4	−46 Sub-standard: a ** This question is a possible sample of an Equation Editor technology-enhanced question.**
5	Quadrant 3 Sub-standard: b

| 6 | |

$$-\frac{4}{3} \quad -\frac{4}{5} \quad -\frac{2}{3} \quad \frac{7}{10} \quad \frac{7}{8}$$

This question is a possible sample of an Drag & Drop Hot Text technology – enhanced item.

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.NS.3.7a, b, c, d
1	**Part A** 	SeaWolf	Nautilus | 	---	--- | 	−40	−100	 **Part B** −40 > −100 or −100 < −40 Sub-standard: b **The question in this section is a possible sample of an Equation Editor technology-enhanced question.**
2	The student: Part A Represents the first scenario with the inequality 0 > -54 or -54 < 0. Part B Represents the second scenario with the inequality 20 > -60 or -60 < 20. Sub-standard: a **The question in this section is a possible sample of an Equation Editor technology-enhanced question.**
3	D Sub-standard: c
4	−10°F −13°F −21°F **The question in this section is a possible sample of an Multi-Select technology-enhanced question.** Sub-standard: d

5	☐ San Bernadane
	☑ Atlantia
	☐ Tysonia
	☑ Maurian
	☐ Los Hanicca
	The question in this section is a possible sample of an Multi-Select technology-enhanced question.
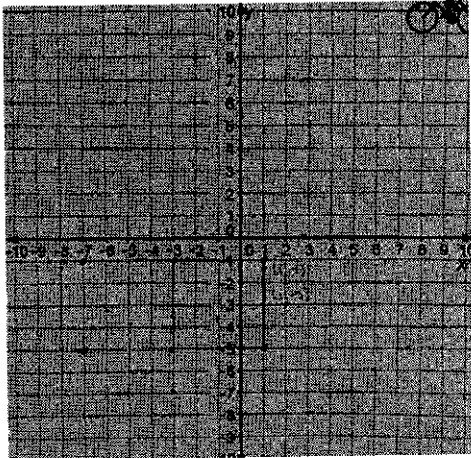
6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.NS.3.7a, b, c, d – Practice
1	−8.5°C > −15°C Sub-standard: b
2	x < 3 Sub-standard: a
3	$215.00 The student has to understand that |-$215| = $215 Sub-standard: c
4	Less than (<) Sub-standard: d
5	 -120 -40 15 170 Sub-standard: b

**Questions 1 – 4 in this section are possible samples of an Equation Editor technology-enhanced question. **

**Question 5 in this section is possible a sample of Drag and Drop Hot Text technology-enhanced question. **

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.NS.3.8
1	9
2	7 units
3	The student graphs the two given points correctly and finds the coordinates of two additional vertices, at either (1, -1) and (1, -5) or at (-7, -1) and (-7, -5), to form a square. The student then finds the coordinates of a second pair of vertices to form a square.

	MAFS.6.NS.3.8 – Practice
1	F
2	B
3	4 units

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.1.1
1	7^6
2	16
3	5^5
	All questions in this section are possible samples of an Equation Editor technology-enhanced question.

	MAFS.6.EE.1.1 - Practice
1	3^7
2	64
3	$\dfrac{8}{125}$
	All questions in this section are possible samples of an Equation Editor technology-enhanced question.

6ᵗʰ Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.1.2a, b, c
1	$x + 6$ **The question in this section is a possible sample of an Equation Editor technology-enhanced question.** Sub-standard: a
2	$2p$ ⟷ product $\frac{3p^2}{5}$ ⟷ quotient $24 - 2p$ ⟷ difference 3 ⟷ coefficient **The question in this section is a possible sample of an Drag and Drop Hot Text technology-enhanced question.** Sub-standard: b
3	B, C **The question in this section is a possible sample of an Multi-Select technology-enhanced question.** Sub-standard: a
4	Its volume is 8 inches cubed and its surface area is 24 inches squared. **The question in this section is a possible sample of an Equation Editor technology-enhanced question.** Sub-standard: c

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.1.2a, b, c - Practice
1	☑ $15 + 3 \times n$ ☐ $3 \times 15n$ ☑ $15 + 3n$ ☐ $15 \times n + 3$ ☑ $(n \times 3) + 15$ ☐ $(n + 15) \times 3$ **The question in this section is a possible sample of an Multi-Select technology-enhanced question.**
2	A Sub-standard: a
3	☑ Samantha has a job babysitting. She earns \$8 for every hour that she works. This week she earned \$143, which included a \$15 tip. ☐ Mr. Wilks mows lawns for extra money. Each lawn that he mows, he earns \$15. After collecting the money for the lawns he mowed this week, he added the amount to the \$8 in his wallet, totaling \$143. ☐ Roger works in the meat section of a grocery store. So far this morning, he has cut 8 salmon steaks. In the meat display, there are several rows of 15 salmons steaks. When Roger puts the cut salmon steaks in the meat display, there will be 143 salmon steaks. ☑ Ms. Williams was looking for pencils. She found a box with 15 pencils in the drawer. Then, she found some unopened packages with 8 pencils in each package. After counting all of the pencils, she had 143 pencils. **The question in this section is a possible sample of an Multi-Select technology-enhanced question.**
4	D

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.1.3
1	$4w + 10$
2	$6n + 18$
3	$4b + 8$
	All questions in this section are possible samples of an Equation Editor Choice technology-enhanced question.

	MAFS.6.EE.1.3 – Practice
1	$2t + 18$
2	$36x$
3	$4z$
	All questions in this section are possible samples of an Equation Editor Choice technology-enhanced question.

6ᵗʰ Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.1.4
1	B, D **This question is a possible sample of a Multi-Select technology –enhanced item.**
2	

Expressions	Yes	No
6y + 1	☐	■
6y + 7	☐	■
6(y) + 1(y)	☐	■
6(y) + 6(1)	■	☐
6y + 6	■	☐

This question is a possible sample of a Multi-Select technology –enhanced item.

3	D

	MAFS.6.EE.1.4 – Practice
1	

Expressions Equivalent to 2(3x + 7y)	Expressions Equivalent to ½(12x + 14y)
6x + 14y	6x + 7y
(2x + 4y) + 2(2x + 5y)	(2x + 3y) + 4(x + y)

This question is a possible sample of a Drag and Drop Hot Text technology-enhanced question.

2	C
3	B

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.2.5
1	B
2	
3	C

For row 2:

Equations	Yes	No
$5a - 1 = 14$ true for $a = 3$	■	☐
$100 - b^2 = 80$ true for $b = 10$	☐	■
$32 = 16f$ true for $f = 2$	■	☐

This question is a possible sample of a Multi-Select technology –enhanced item.

	MAFS.6.EE.2.5 – Practice
1	☐ $x = 1$ ☑ $x = 2$ ☐ $x = 3$ ☐ $x = 4$ ☑ $x = 5$ ☐ $x = 6$ **This question is a possible sample of a Multi-Select technology –enhanced item.**
2	D
3	A

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.2.6
1	D
2	$36.75-3x$ **This question is a possible sample of an Equation Editor technology –enhanced item.**
3	$\frac{1}{4}d$ **This question is a possible sample of an Equation Editor technology –enhanced item.**
4	D
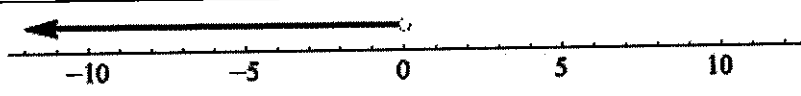
	MAFS.6.EE.2.6 – Practice
1	B
2	The student states that x represents the value of *each* coin. The student states that the possible values of x are 1, 5, 10, 25, 50, and 100. The student states if $10x = 50$ then $x = 5$.
3	$2n$
4	N = Nadine Points M = Mark Points $N = M + 5$
	Questions 2 – 4 are all possible samples of an Open Response technology –enhanced item.

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.2.7
1	**Part A:** t $\boxed{\times}$ $\boxed{8}$ $=$ $\boxed{39.60}$ **Part B: 4.95** ==**This question is a possible sample of an Editing Task Choice technology – enhanced item.**==
2	18
3	$2\frac{1}{2} + h = 5$ $h = 2\frac{1}{2}$
4	$x = 4$
==**All questions in this section are possible samples of an Equation Editor technology-enhanced question.**==

	MAFS.6.EE.2.7 – Practice
1	$\frac{25}{2}$ or $12\frac{1}{2}$
2	$6x = 1110$ $x = 185$
3	$\frac{3}{5}s = 24$ $s = 40$
4	$r = 32$
==**All questions in this section are possible samples of an Equation Editor technology-enhanced question.**==

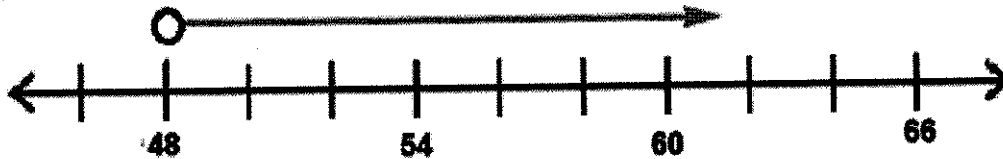|	MAFS.6.EE.2.8
1	$h > 6000$ or $6000 < h$ **This question is a possible sample of an Equation Editor technology –enhanced item.**
2	$t < -2$ or $-2 > t$ **This question is a possible sample of an Equation Editor technology –enhanced item.**
3	$w \geq 12$ or $12 \leq w$ **This question is a possible sample of an Equation Editor technology –enhanced item.**
4	 This question is a possible sample of a Graphic Response Item Display (GRID) technology –enhanced item.**

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.2.8 – Practice
1	$g < 4.06$ or $4.06 > g$ **This question is a possible sample of an Equation Editor technology –enhanced item.**
2	 This question is a possible sample of a Graphic Response Item Display (GRID) technology –enhanced item.**
3	**Part A** **Part B**
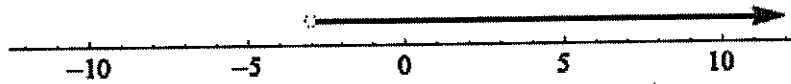
Part B table:

Value	Yes	No	Value	Yes	No
47.9 inches	☐	■	$50\frac{3}{4}$ inches	■	☐
$48\frac{1}{4}$ inches	■	☐	48 inches	☐	■
4.899 inches	☐	■	$\frac{48}{2}$ inches	☐	■
48.00 inches	☐	■	$40\frac{8}{10}$ inches	☐	■

These questions are possible samples of a Graphic Response Item Display (GRID) & Table Item technology –enhanced item.**

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.EE.3.9	
1	C	
2	Part A: 1.25 Part B: $y=5.5x$	
3	Part A: $q = 1500 - n$ Part B: The independent variable as the quantity of coffee beans removed is n and the dependent variable as the quantity of coffee beans remaining in the storage bin is q.	
4	$d = 10h$	

	MAFS.6.EE.3.9 – Practice	
1	C	
2	Part A $c = 200 - 2t$ Part B The independent variable as the number of times the crank is turned is t, and the dependent variable as the amount of coffee remaining is c.	
3	<table><tr><th>Number of Bouquets, b</th><th>Number of Flowers, f</th></tr><tr><td>4</td><td>32</td></tr><tr><td>8</td><td>64</td></tr><tr><td>12</td><td>96</td></tr></table> Ms. Roberts used 224 flowers today to make **28** bouquets. **This question is a possible sample of Table Item technology –enhanced item.**	

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.G.1.1	
1.	Part A: 24 Part B: $\dfrac{1}{4}$	
2.	The student finds an area of 105 cm² for the trapezoid showing work clearly to support the answer.	
3.	104 in²	
	All questions in this section are possible samples of an Equation Editor technology-enhanced question.	

	MAFS.6.G.1.1 – Practice	
1.	The student finds an area of 168 yd² for the parallelogram showing work clearly to support the answer.	
2.	319 ft²	
3.	24.5 in²	
	All questions in this section are possible samples of an Equation Editor technology-enhanced question.	

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.G.1.2
1	4680 in^3
2	$\dfrac{3}{8}$ in^3 or equivalent
3	$\dfrac{45}{8}$ cm^3
	All questions in this section are possible samples of an Equation Editor technology-enhanced question.

	MAFS.6.G.1.2 – Practice
1	$\dfrac{1}{10}$ cm^3
2	$\dfrac{1}{2}$ ft^3
3	450 m^3
	All questions in this section are possible samples of an Equation Editor technology-enhanced question.

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.G.1.3
1	
	This question is a possible sample of a Graphic Response Item Display (GRID) technology –enhanced item.
2	5 units
3	30 units; 5 (length of side) × 6 (number of sides) = 30

	MAFS.6.G.1.3 – Practice
1 & 2	The student plots the points and graphs the rectangle correctly and determines the length of the base ($9\frac{1}{2}$ units) and height (3 units), and uses the dimensions to determine the area of the rectangle as $28\frac{1}{2}$ square units.
3	A

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.G.1.4
1	Part A: D Part B: 1300
2	Square Pyramid
3	1,734 sq mm

	MAFS.6.G.1.4 – Practice
1	23,152 sq in
2	Part A: Square Pyramid Part B: 16 square units
3	14 sq in

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.SP.1.1
1	C
2	☐ How many days are in March? ☐ How old is your dog? ☒ How old are the dogs on this street? ☒ What percent of people like watermelons? ☐ Do you like watermelons? ☐ How many bricks are in this wall? ☐ What was the highest temperature today in town? **This question is a possible sample of a Multi-Select technology –enhanced item.**
3	☑ How many houses are in each neighborhood? ☐ What is the size of the largest yard in all the neighborhoods? ☐ How many students are enrolled in the smallest school? ☑ How many schools are in each neighborhood? ☐ How many houses have fences around the backyards? **This question is a possible sample of a Multi-Select technology –enhanced item.**

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.SP.1.1 – Practice
1	D
2	☐ How far are we from the restaurant? ☐ How long will it be until we get there? ☒ Would you rather have burgers or pizza? ☒ How much should we leave for the tip? ☐ What was the most frequently ordered dish in the restaurant this evening? ☒ Did you like the pizza tonight? ☐ Which table's bill was the highest? ☐ How many people were sitting at each table this evening? **This question is a possible sample of a Multi-Select technology –enhanced item.**
3	B

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.SP.1.2
1	A
2	B
3	D

	MAFS.6.SP.1.2 – Practice
1	B
2	C
3	C

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.SP.1.3
1	B
2	D
3	C
4	D

	MAFS.6.SP.1.3 – Practice
1	A
2	C
3	C
4	A

6th Grade –MAFS Spiral Review Packet – Answer Key

	MAFS.6.SP.2.4
1	**Library Visitors** A bar chart/histogram titled "Library Visitors" with y-axis "Number of Visitors" (0 to 8) and x-axis "Age" (0–9, 10–19, 20–29, 30–39, 40–49, 50–59). Bar heights: 0–9 = 4, 10–19 = 6, 20–29 = 3, 30–39 = 2, 40–49 = 1, 50–59 = 4. **This question is a possible Hot Text: drag and drop technology-enhanced item.**
2	B
3	A line plot titled "Time (minutes)" with values 3 through 9. Dots: 3 = 3, 4 = 4, 5 = 5, 6 = 3, 7 = 1, 8 = 2, 9 = 1. **This question is a possible sample of a Graphic Response Item Display (GRID) technology –enhanced item.**

	MAFS.6.SP.2.4 – Practice
1	C
2	The student correctly scales the axis using reasonable limits, finds and graphs the five-number summary (minimum = 11, Q_1 = 15.5, median = 23, Q_3 = 29, and maximum = 34), draws the box and whiskers, and includes an axis label and title. **Shark Attacks in Florida (2001-2013)** Number of Attacks ****This question is a possible sample of a Graphic Response Item Display (GRID) technology –enhanced item.****
3	B

	MAFS.6.SP.2.5a, b, c, d
1	Part A: 5 Part B: The mean of the lengths of the insects measured by the science class is 5/8 , which is greater than the mean length of adults of that type. Sub-Standard: a & b
2	A Sub-Standard: b
3	B Sub-standard: c

	MAFS.6.SP.2.5a, b, c, d – Practice
1	A Sub-Standard: b
2	C Sub-standard: c
3	A Sub-Standard: d