



# *At Home Learning Resources*

## **Grade 8 - Week 11**



*Get Counted*  
**2020 Census**

The Census starts in April  
More info | [www.2020census.gov](http://www.2020census.gov) | Job opportunities

### How to take the 2020 Census



Online



Phone



Mail

### Why it matters

**Federal funding**  
For local programs and organizations

**Better planning**  
For roads, schools, healthcare and emergency services

**Determines representation**  
In Congress and the state legislature

**Helps businesses**  
Locate factories and stores, recruit employees and conduct market research

**Shape your future**  
**Your community, your voice**

<https://2020census.gov/>

## Grade 8 ELA Week 11

All previous activities, as well as other resources can be found on the Lowell Public Schools website:

<https://www.lowell.k12.ma.us/Page/3804>

This week continues a focus on science fiction reading and writing. Your child should be reading, writing, talking and writing about reading, and learning about prefixes, root words, and suffixes this week.

**Reading:** Students need to read each day. They can read the science fiction text included in this packet and/or read any of the science fiction/dystopian books that they have at home, or can access online at Epic Books, Tumblebooks, the Pollard Library online, or other online books. All resources are on the LPS website. There is something for everyone.

**Talking and Writing about Reading:** As students are reading, they can think about their reading, then talk about their reading with a family member and/or write about their reading using the prompts/questions included.

**Writing:** Students will continue working on writing science fiction stories for the next few weeks. The resources in this packet will be the same for next week for writing as well. These resources are charts with examples to help your child write. They are available online in an interactive form with video tutorials here: [Grade 8 Science Fiction Writing Choice Board](#). This writing should last throughout the weeks. Students will be planning their writing, then writing, then making it even better by revising, writing some more, and at the end, fixing it up by editing. Your child might write 1 science fiction story and work to refine it throughout, or might write multiple science fiction stories, getting better each time.

**Word Work:** Students can work on learning new vocabulary. Students will review prefixes, root words, and suffixes.

When reading science fiction texts, think about the following. Annotate, stop and jot, and respond in writing as you are reading or when you are done.

## To Investigate Themes...

*Read, considering similarities to your own life, and asking "What does this reveal about the world we live in?"*

How is this like my life?      How does this fit with the world?

Consider how characters' conflicts become motifs.



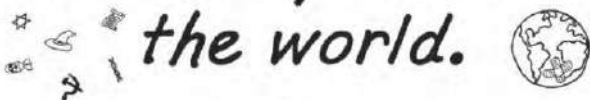
Question the text.



Notice possible symbolism, and think how it relates to themes.



*Think about how symbols' meanings change in light of what they mean in the world.*



How does the ending of the book lead to new insights about possible themes and about what came before?



The invitation card has a Western theme. Along its margins, cartoon girls in cowboy hats chase a herd of wild Ponies. The Ponies are no taller than the girls, fat and bright as butterflies, with short, round-tipped unicorn horns and small fluffy wings. At the bottom of the card, newly caught Ponies mill about in a corral. The girls have lassooed a pink-and-white Pony. Its eyes and mouth are surprised round Os. There is an exclamation mark over its head.

The little girls are cutting off its horn with curved knives. Its wings are already removed, part of a pile beside the corral.

You and your Pony \_\_\_\_ [and Sunny's name is handwritten here, in puffy girl-letters] \_\_\_\_ are invited to a cutting-out party with TheOtherGirls! If we like you, and if your Pony does okay, we'll let you hang out with us.

"Yay!" Sunny says. "I can't wait to have friends!" She reads over Barbara's shoulder, her rose-scented breath woofling through Barbara's hair. They are in the big backyard next to Sunny's pink stable.

Barbara says, "Do you know what you want to keep?"

Sunny's tiny wings are a blur as she hops into the air, loops and then hovers, legs curled under her. "Oh, being able to talk, absolutely! Flying is great but talking is way better!" She drops to the grass. "I don't know why any Pony would keep her horn! It's not like it does anything!"

This is the way it's always been, as long as there have been Ponies. All ponies have wings. All Ponies have horns. All Ponies can talk. Then all Ponies go to a cutting-out party with AllTheGirls and they give up two of the three, because that's what has to happen if a Girl is going to fit in with TheOtherGirls. The Ponies must all keep their voices because Barbara's never seen one that still had her horn or wings after her cutting-out party.

Barbara sees TheOtherGirls' Ponies all the time, peeking in the classroom windows just before recess or clustered at the bus stop after school. They're baby pink and lavender and daffodil-yellow, with flossy manes in ringlets and tails that curl to the ground. When not at school and cello lessons and ballet class and soccer practice and play group and the orthodontist's, TheOtherGirls spend their days with their Ponies.

The party is at TopGirl's house, which has a mother who's a pediatrician and a father who's a cardiologist and a small barn and giant trees shading the grass where the Ponies are playing games. Sunny walks out to them nervously. They touch her horn and

wings with their velvet noses and then the Ponies all walk out to the lilac barn at the bottom of the pasture where a bale of hay is broken open for them.

TopGirl meets Barbara at the fence. "That's your Pony?" she says without greeting. "She's not as nice as mine."

Barbara is defensive. "She's beautiful!" She knows this is a misstep and adds, "Yours is so pretty!" And TopGirl's Pony Starblossom is pretty. Her tail is every shade of purple and glitters with stars; but Sunny's tail is creamy white and shines with honey-colored light, and Barbara knows that Sunny's the most beautiful Pony ever.

TopGirl walks away, saying over her shoulder, "There's Rock Band in the family room and a bunch of TheOtherGirls are hanging out on the deck and Mom bought some cookies and there's Coke Zero and diet Red Bull and diet lemonade."

"Where are you?" Barbara asks.

"I'm outside," TopGirl says so Barbara gets a Crystal Light and three frosted raisin-oatmeal cookies and follows her. TheOtherGirls outside are listening to an iPod plugged into speakers and playing Wii tennis and watching the Ponies play HideAndSeek and Who'sPrettiest and ThisIsTheBestGame. They are all there, SecondGirl and SuckUpGirl and EveryoneLikesHerGirl and the rest. Barbara only says anything when she thinks she'll get it right. It seems as though it's going okay.

And then it's time. TheOtherGirls and their silent Ponies collect in a ring around Barbara and Sunny. Barbara feels sick.

TopGirl says to Barbara, "What did she pick?"

Sunny looks scared but answers her directly. "I would rather talk than fly or stab things with my horn."

TopGirl says to Barbara, "That's what Ponies always say." She gives Barbara a curved knife with a blade as long as a woman's hand.

"Me?" Barbara says. "I thought someone else did it, a grownup."

TopGirl says, "Everyone does it for their own Pony. I did it for Starblossom."

In silence Sunny stretches out a wing.

It's not the way it would be, cutting a real pony. The wing comes off easily, smooth as plastic, and the blood smells like cotton candy at the fair. There's a shiny trembling oval



where the wing was as though Barbara cut rose-flavored Turkish Delight in half and saw the pink under the powdered sugar. Barbara thinks, *It's sort of pretty*, and throws up.

Sunny shivers, her eyes shut tight. Barbara cuts off the second wing and lays it beside the first.

The horn is harder, like paring a real pony's hooves. Barbara's hand slips and she cuts Sunny, and there's more cotton-candy blood. And then the horn lies in the grass beside the wings.

Sunny drops to her knees. Barbara throws the knife down and falls beside her, sobbing and hiccuping. She scrubs her face with the back of her hand and looks up at the circle. "Now what?"

Starblossom touches the knife with her nose, pushes it toward Barbara with one lilac hoof. "You're not done yet," TopGirl says. "Now the voice. You have to take away her voice."

"But I already cut off her wings and her horn!" Barbara throws her arms around Sunny's neck. "Two of the three, you said!"

"That's the cutting-out, yeah," TopGirl says. "That's what you do to be OneOfUs. But the Ponies pick their own friends and that costs, too." Starblossom tosses her violet mane. For the first time, Barbara sees that there is a scar shaped like a smile on her throat. All the Ponies have one.

"I can't!" Barbara tells TheOtherGirls, TopGirl, Starblossom, Sunny. But even as she cries until her face is caked with snot and tears, she knows she's going to. When she's done she picks up the knife and pulls herself upright.

Sunny stands up beside her on trembling legs. She looks very small without her horn, her wings. Barbara's hands are slippery. She tightens her grip.

"No," Sunny says suddenly. "Not even for friends. Not even for you."

And Sunny spins and runs, runs for the fence in a gallop as fast and beautiful as a real pony's. But there are more of the others and they are bigger, and Sunny doesn't have her wings to fly or her horn to fight. They pull her down before she can jump the fence into the woods beyond. Sunny cries out and then there is nothing, only the sound of pounding hooves from the tight circle of Ponies.

TheOtherGirls stand, frozen, their blind faces turned toward the Ponies.

The Ponies break their circle, trot away. There is no sign of Sunny, beyond a spray of cotton-candy blood and a coil of her mane torn free and fading as it falls to the grass.

Into the silence TopGirl says, "Cookies?" Her voice sounds fragile and false. TheOtherGirls crowd into the house, chattering in equally artificial voices. They start up a game, drink more Diet Coke. Soon they sound almost normal.

Barbara stumbles after them into the family room. "What are you playing?" she says uncertainly.

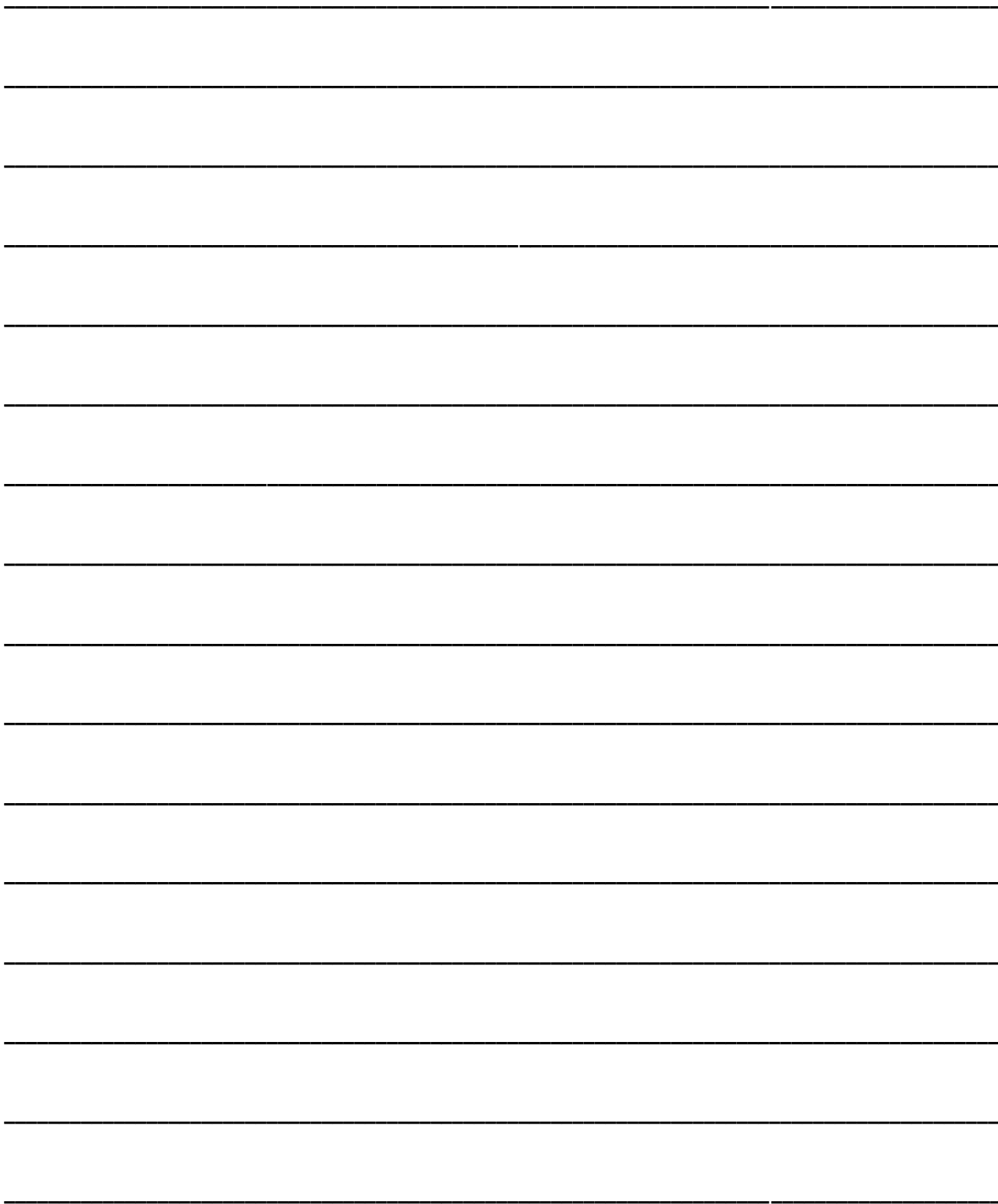
"Why are you here?" FirstGirl says, as though noticing her for the first time. "You're not OneOfUs."

TheOtherGirls nod. "You don't have a pony."

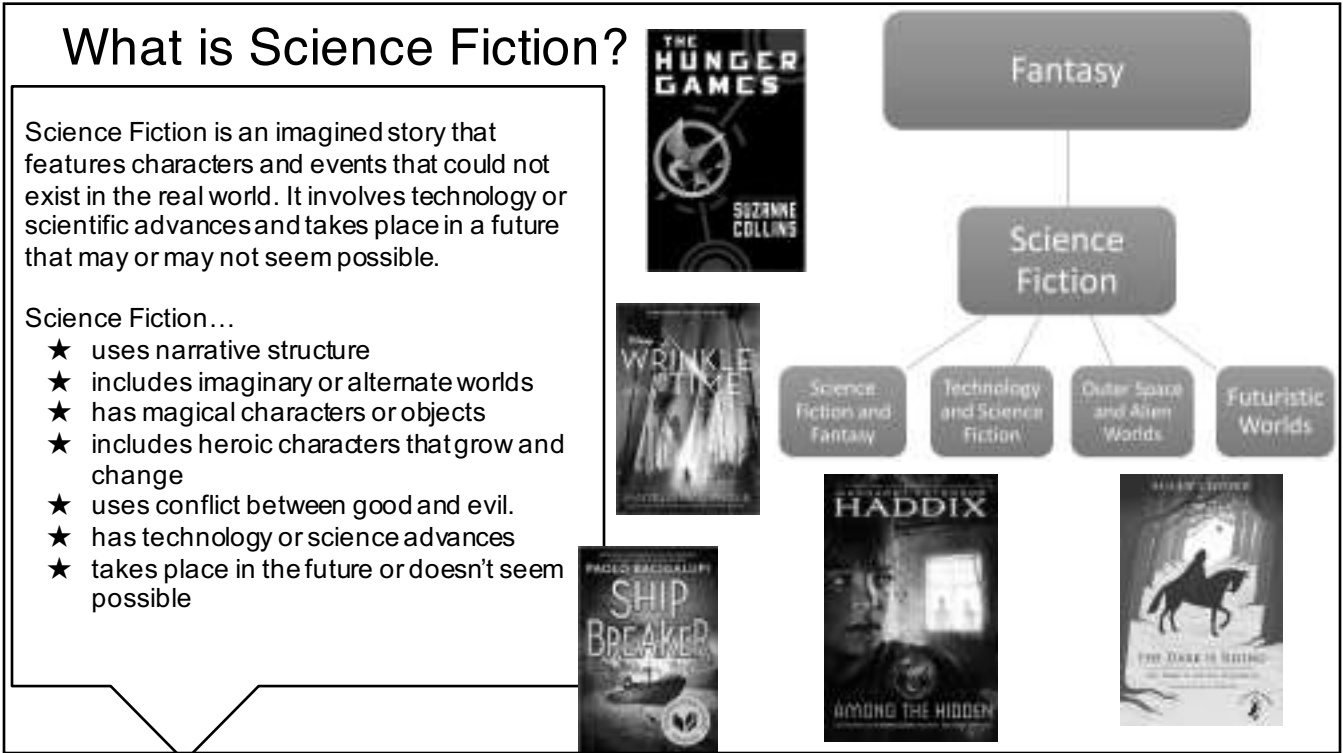
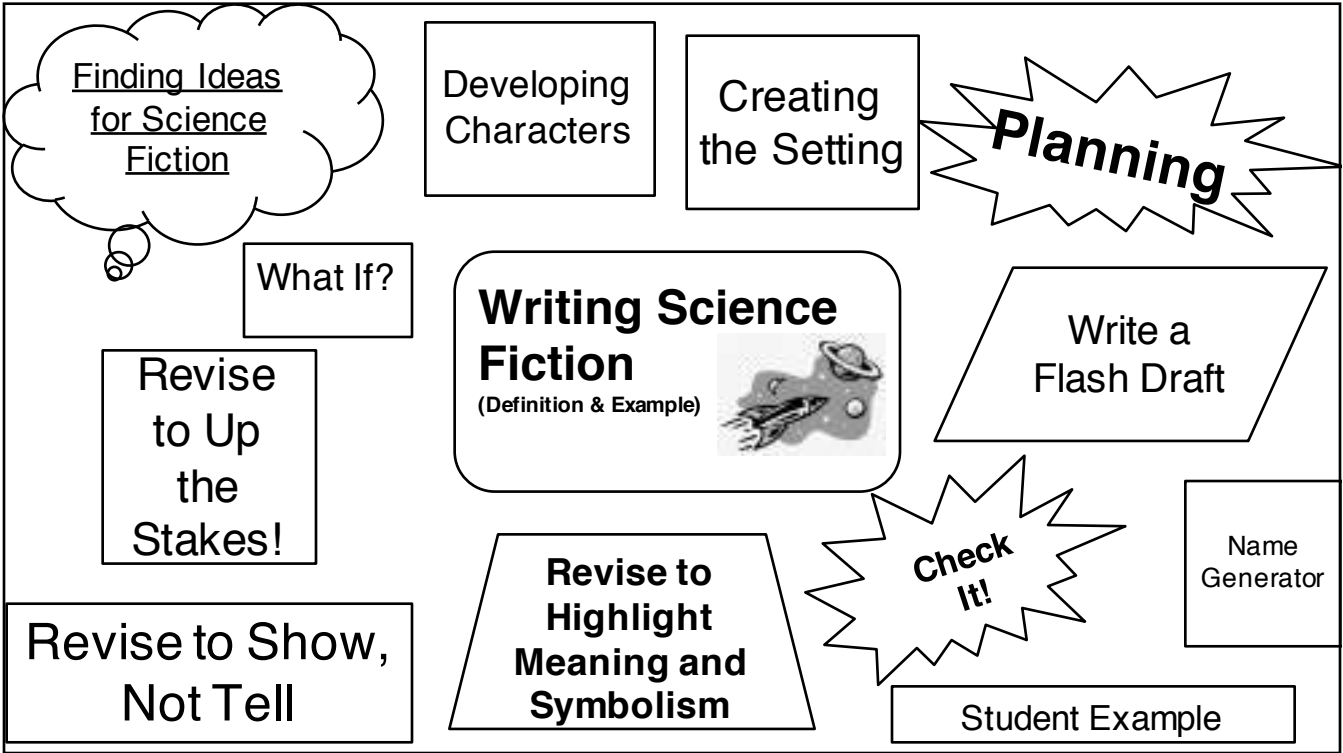
"Ponies" © 2010 by Kij Johnson. Originally published on *Tor.com* (2010) and reprinted with permission from *At the Mouth of the River of Bees* (Small Beer Press, 2012).

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Grade 8 Science Fiction Writing Choice Board - Visit the online option for an interactive board with tutorials. Use the anchor charts to help you write your own science fiction story.



## Finding Ideas for Science Fiction...Science Fiction Writers:

Ask "What If?" about the world they live in to generate story ideas. Read the poem by Jackie French Koller and jot your thinking about IF these events had never happened to help you develop your ideas. What If?

### Find Inspiration in Real Life

- Pay attention to the small moments in your life that could be fictionalized.
- Consider places where stories could take place, and then imagine those stories.
- Read about current events in newspapers, blogs, magazines, etc. Allow yourself to be inspired by true events that could be fictionalized.
- Ask, "What stories do I wish existed in the world?" Let this question lead you to invent a character with traits, struggles, actions.
- Think about an issue that is important to you, and create a character who struggles with that issue.

Think about setting: Gather ideas for a potential setting for your science fiction story and let that be the starting point for your story.

Earth, outer space, another dimension...



## main character

**You want to make sure you create a main character that sticks in your reader's mind.**

- ★ What does your character look like? What are their facial features? Their voice?
- ★ What is special about your character? For example:
  - How do they walk?
  - How do they talk?
  - Who are their friends?
  - What does your character want?
- ★ What kinds of internal thoughts is your character having? For example, is there a problem your character is dealing with?

The robot was magnificent. Its frame was mostly heavy cardboard that had been painted silver. A sparkling pot sat atop the body, bolts welded into place for eyes and teeth.

Tin can hands dangled from lengths of rope wrapped in duct tape, which served as arms. The robot's legs and feet were sledgehammers standing on end.

A multitude of colored light bulbs were affixed to every surface that was vaguely straight and sturdy enough to hold them. An enormous boat wheel protruded from the back, its spokes ringing futuristic-sounding bells as it spun.



# Setting

You decide when your story takes place. You can create a setting in your own world, one that is built on portals in another world, or based entirely in outer space. Anywhere!

- ★ Is your setting similar to your real world?
- ★ Did you create a setting in another world or in outer space?
- ★ Did you create objects and scenery from another world?
- ★ Does your story take place in the present or in the future?
- ★ How is your setting important to what your characters say and do and the way they act?



Somebody asked me if I'd heard that there were immortal people on the Yendian Plane, and somebody else told me that there were, so when I got there, I asked about them. The travel agent rather reluctantly showed me a place called the Island of the Immortals on her map. "You don't want to go there," she said.

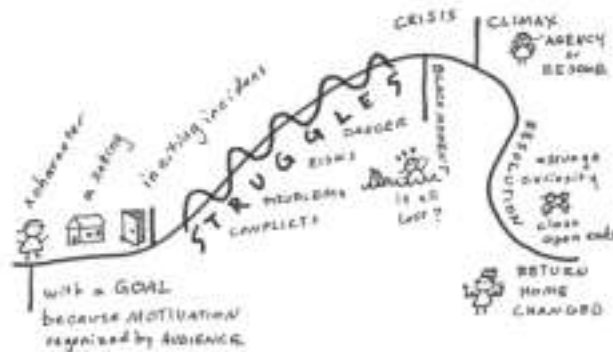
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# Plan

Revisit your ideas about setting and main character. Ask yourself: Do you think you can grow it into a full science fiction story? If so, create a plan for your story.



Be sure to include scientific facts or data as you create your plan.  
What problems will the characters face?



## Flash Draft



### Bring your story to life!

- ★ Block everything out and begin to “**flash draft**” your story.
- ★ Enter the world which you have already created: the **characters**, **setting**, and **use your plot plan**.
- ★ Write **fast and furious**, using all the **important details** you have worked on.
- ★ Be sure to include a conflict including the rising actions & resolution.

A government decree.  
That's all it took for all mankind to come crashing down.  
I remember my grandfather telling me how his great-great-grandfather had seen it all happen. Passed down through seven generations, it became the story of our family. The story of our end. Grandpa recalled it word by word.  
He had said, "I remember it like yesterday, yes I do. It was broadcast on live television, and the whole internet was overridden by it. The little TVs inside of cars, SmartBoards in classrooms, I heard even New York's Times Square was begged by this broadcast."  
"The Expiration Act, it was called. The old man president was standing with all the other world leaders. All nice and organized, fake smiles and all. Not a single bit of remorse was shown by any of them, I'm telling you."  
"They said something like, 'Starting on April 23, 2049, every human who is above 18 years of age shall be issued an expiration date. It has been decided these dates will be carved by specialists into the individual's skin, as that is the only way to ensure the date is not lost. This may seem quite frightening, but we can rest assured knowing that this is the way to maintain the world's growing population.'  
"But I'm very sure, positive with no doubt in my old mind, that it was not the right way. And nobody else thought it was either. But it was the world's most powerful armocram. What could we do? We lost all our hope in humanity."  
That was how this miserable part of life came about. An announcement made by world leaders, and now the people are dying even more than before. All for the sake of maintaining population.

## Revise to Up the Stakes!

**Writers try different ways to up the stakes and keep their readers interested. They...**

- Increase the obstacles characters face
- Make it challenging for characters to act
- Raise the character's motivation
- Or add danger or a crunch time.

"Under the new rule, both tributes from the same district will be declared winners if they are the last two alive. Claudius pauses, as if he knows we're not getting it, and repeats the change again.

The news sinks in. Two tributes can win this year. If they're from the same district. Both can live. Both of us can live.


Before I can stop myself, I call out Peeta's name" (p. 231).




She walked into the room and felt scared. She looked left and right, but couldn't see much in the darkness. She continued further into the house. All of a sudden the lights turned on and the intercom said, "Welcome Kira."

As a writer, I can show my reader what's important by using sentence twinning and descriptive words. This is an important moment, and I tell the reader she's scared. I can "twin" my sentences instead.

**Tips to Writing Twin Sentences**




1. Write or find a sentence where you do something important to the story. 
2. To write a twin sentence, think:
  - What was it like when you did that? (sad face, neutral face, happy face)
  - What did you do RIGHT after? (curved arrow)
  - What did you think? Feel? Say? (thought bubble, heart, speech bubble)

**Revise to Show, Not Tell**

She walked into the room and immediately felt coldness. The hairs on her arms stood up, and she shivered uncontrollably.

**EXAMPLES:**



I sat on a park bench. ~~I was so wet my pants got soaked.~~  
 I sat on a park bench. I thought, "This is a nice place to sit."

**Revise to Highlight Meaning and Symbolism**

Now You Try!

- 1) Think about what your story is really about - what's the deeper meaning?
- 2) Re-read and look for objects, settings, or actions that connect to your meaning
- 3) Try describing them in detail, repeating them throughout, or making them really important to the characters
- 4) Always remember to re-read to make sure what you added makes your meaning clearer.

*Dark They Were, and Golden-eyed*, by Ray Bradbury

The very first sentence he introduces the "wind" which he uses repeatedly to emphasize the eery unknown of the planet Mars where the characters are living and symbolize what is changing and unknown throughout the story.

"The rocket metal cooled in the meadow winds. Its lid gave a bulging pop. From its clock interior stepped a man, a woman, and three children."

Then when the characters find out the rockets have been destroyed and they can never go back to Earth, Bradbury writes...

"Laura wept, 'We are stranded on Mars, forever and ever!' For a long time there was only the sound of the wind in the afternoon."

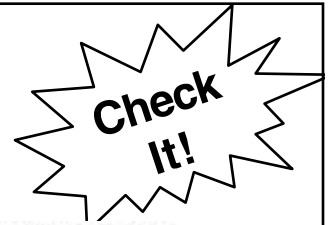
**Ray Bradbury repeats the "wind" over 10 times throughout the story!**

"The wind blew as if to flake away their identities."



## Narrative Writing Checklist

	Conventions			
<b>Spelling</b>	I used the Internet and other sources to check the spelling of literary, historical, and geographical words.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Punctuation and Sentence Structure</b>	I used different sentence structures to achieve different purposes throughout my piece. I used verb tenses that shift when needed (such as when moving from a flashback back into the present tense of the story), deciding between active and passive voice where	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



### Punctuating Dialogue

- “Fool!” cried Bramante.
- “I prefer the rockets myself,” said old Bramante.
- “You understand?” he asked.

### Using Commas

- He would tiptoe from bed, certain that his kind wife was dreaming, to let himself out into the night air.
- Science, comfort, new things for all! Ha!

### Using Apostrophes

- “Oh, it's you, bramante!”
- “Think what you would see,” said Bodoni's wife.
- It held the whiteness of the moon and the blueness of the star's.



### Last Minute Editing Checklist

- ✓ I checked that the names of people and places are spelled correctly.
- ✓ I ran a finger over each sentence to make sure my ending punctuation is clear and that the commas seem sensible and similar to those I see in books and articles.
- ✓ I looked at my quotes and compared the very specific punctuation to these models:
  - Introducing the quote, then giving the quotation: According to one witness, “The car came out of nowhere, and so did the brave bystander!”
  - Tacking a quote into narrative/explanation: A witness first claimed that “the car came out of nowhere,” before adding, “and so did the brave bystander.”
  - Leading with a quote, then adding narrative/explanation: “The man swept the dog right from under the car's wheels” was how witnesses described the incident.
- ✓ I indented or skipped lines to paragraph when the setting changes, when time changes, for a mood change, and especially paragraphs—for new ideas or examples.

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That was how this miserable part of life came about. An announcement made by world leaders, and now the people are dying even more than before. All for the sake of maintaining population.

I remember my Carving Day. It was December 27, 3088. I was scared. Nervous. Jittery. But strangely excited. I guess it was because your Carving Day signified you crossing the bridge into "adulthood." More like death.

I had stepped into the hospital, and walked up to the front desk. The suffocating scent of bleach burned my nostrils.

"Hel-"

"Name?" The secretary had cut me off before I could even properly greet her.

"Jennie Han." I told her. Obviously she wasn't one for conversation. She typed furiously on the keyboard, the sound of her nails clicking on the keys echoed in the empty entrance hall.

"So today's Carving Day, huh? Follow me." The secretary rose from her seat and began a brisk walk to the carver's room. The door seemed daunting. On it was a fresh golden plaque with big, bold letters that read,

MASTER CARVER

ED SANDMAN

"Carving dates and saving lives."

Below the plaque, an imprint of a scalpel and a date were embedded into the metal door. It's like they don't even try to make how terrifying it is a secret. They really do want us to know there is not hope left for us all.

The secretary knocked on the door twice. We waited in silence until a menacing voice pierced through the air.

"Come in." I could hear the teasing tone in his voice.

"Good luck." The secretary whispered to me as I opened the door.

The room was surprisingly enough, like an angel's room. White curtains, white seating, white floors, white walls. Everything in this room was a pristine, pure white. Odd for such a formidable day.

The 'master carver' was sitting at his desk, facing a small laptop. Looking up at me, he grinned.

"Jennie Han. I'll be carving December 27, 3089 into your arm today. Nice to meet you, I'm Ed Sandman. You can call me Mr. Sandman. Master carver."

I stood in silence, staring at his extended hand, calling for me to shake it.

"Not one for words, huh? I guess I'll be the only one talking today, then." He coughed awkwardly before slowly lowering his hand. He turned around, and his back faced me.

"I guess I must've scared you with my teasing. Don't worry, it's just like a little icebreaker. All of you come in so tense and rigid. Hard enough as it is when I have to not make a mess in this paper-white room." The carver began to ramble as he began setting up for the carving. He had pulled back a white vinyl curtain that separated the room into two parts. Behind that curtain was several different tools all lined on the back wall. Scalpels, prodders, scissors, and needles hung from the nails driven into the blank white wall. The carver whisked around the room, grabbing scalpels and cotton balls, then placing them on the tray that sat beside an overstuffed lounge chair.

"What's with the prodders?" I asked.

"So the curious cat finally talks." He chuckled. "Well, I'm not just a carver. I'm a licensed surgeon, too. Carvers don't get much action. Especially in New York. It's just old, single businessmen here. All the youngsters are out in Los Angeles, or travelling around to China, France, a lot of Europe, too. America's like an HQ at this point. Everyone's travelling back and forth, always out of country. But at some point, they'll have to return..." He began to trail off into his own thoughts.

We stood there in an awkward silence, leaving ourselves in our own thoughts. I began to think back to my date. Mr. Sandman said December of next year. Exactly one year from now. Why? What did I do to deserve this? There's going to be so much I could never accomplish. I would never get to have my own family. I would never graduate college. I would never fully live out my life. But, why me?

"Excuse me?" I was brought out of my thoughts to find Mr. Sandman standing in the middle of the room, with his tray in one hand, and his arm in mid-air reaching for the hydrogen peroxide.

"I-I was talking to myself. Sorry." I blinked rapidly, trying to grasp the situation. I heard the carver sigh deeply as he set down the tray with a loud *clang*.

"I'm taking a wild guess here, kid. You're wondering why your date is so soon. Right?" He waved the bottle of hydrogen peroxide around as he spoke. I nodded. Mr. Sandman plopped into one of the two lounge chairs, then patted the other. "Come sit. I might as well tell you while carving. You know? Killing two birds with one stone." A small, reassuring smile spread across his face. Almost as if he was too familiar with this situation.

I walked across the room, then gently lowered myself into the opposite overstuffed chair. Mr. Sandman leaned on the table that separated the two of us.

"Look, nobody's so sure about how the dates are decided." He began picking at the cotton balls on the tray. "Personally, I think they do it based on status." He paused to look at my reaction, but there was none. He reached over and picked up my right arm. The carver then soaked a cotton ball with hydrogen peroxide, and began cleaning my forearm with it. "I mean, of course the government wouldn't want to hold a broken reputation. They want to be seen as the richest and best country, not the one overflowing with working class or even lower people. They want to seem perfect to the rest of the world." He went quiet, focusing on making sure I was well disinfected.

“What about you?” I tilted my head slightly to the right, attempting to see his reaction this time. But there was no need to. Mr. Sandman had froze. “What. About. You?” I repeated the question slower, hoping he would catch on and finally answer. The carver straightened his back so he was eye-level with me.

“Carvers don’t have a date. It’s like we’re held hostage in this awful life. That’s just how the system is.” He stated almost nonchalantly. He then mumbled something that was so incoherent, it almost sounded like he said, “Luckily, there’s a rising alliance against this all.”

But I decided not to question it. Instead, I stayed silent as he pulled out a syringe filled with a strange, glowing blue liquid from under the table.

“It says in your records that you’re a pretty squeamish kid, so I’m just going to knock you out. Makes it easier for the both of us, right?” He waved around the needle tip, then pointed at me, signalling that I needed to answer. Bewildered by the sudden appearance of the sedative, I uncertainly nodded in consent.

Without a moment of hesitance, the carver plunged the syringe into my neck. My eyes widened as the liquid overtook my bloodstream. He sat back into his chair, and as my body was shutting down, I could see him reach for the scalpel. My eyes began to grow heavier by the second. I couldn’t help but feel like taking a nice, long nap. Mr. Sandman twirled the scalpel in his hand.

Staring directly into my eyes, he grinned and said, “I think you’ll be happy after this.” Before I had completely lost consciousness, I heard him mumble one last thing, “December 27, 3889.”

It must’ve been only minutes before I came to. The first thing I did was glance at my wrist. Surprisingly enough, it was clean and bandaged really well. It shouldn’t have been *that* surprising. He *is* a surgeon and carver after all.

“Hey, kiddo. I see you’re awake.” Mr. Sandman got up from his desk and walked over to sit in his previous spot. “Do you want to take a look at what I did?” Horrified, I frantically shook my head ‘no.’ He chuckled at my reaction. “I tell you what I did, then. I carved December 27, 3889 into there.” He pointed towards my right forearm that was neatly wrapped in bandages.

I furrowed my eyebrows in confusion. “You mean 3089, right?” This is a joke. What type of ‘master carver’ would mess up their only job?

“No, 3889.” He said giddily.

“Isn’t that...” I couldn’t finish my sentence, thinking of all the punishments doing this could lead to. Not just for Mr. Sandman, but rather for both of us.

“Illegal? Going to get me fired?” He giggled like a schoolgirl who had just heard a really bad pun. Suddenly, his face went stonecold. “Not unless they find out.”

At that moment, I was so perplexed. How could this man, who carves people for a living, have such extreme mood swings?

Before I was able to comprehend what was happening, I was standing out in the hall, and the carver was already bidding me farewell.

“Alrighty now, kid. I hope you had a great Carving Day! Bye bye, now!” He fluttered his hand, and before I could respond, the door had been slammed shut in my face. I stood there, staring blankly at the door in utter shock. However, the door opened again. He poked his head out into the hall, scanning the surroundings.

“Here, I’ll see you soon.” He smiled a fatherly smile, and pushed a card into my open palm. I looked down at the card.

MASTER CARVER  
ED SANDMAN

“Carving dates and saving lives.”

It was his business card. But why would I need it, if I was just carved? I flipped over the card, expecting for nothing to be on the back. But there was something. The bottom right corner of the business card was peeling. Peeking out from under, was a midnight black background. Out of sheer curiosity, I lifted the corner. The whole backing peeled off like a sticker. What was left was something I would have never expected. Written in white ink, standing out from the pitch black darkness of the card, was:

INTL. SURVIVORS

ED SANDMAN

alliance head

“Extending lives with no restrictions.”

A small smile spread across my face. There was still hope.

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# Prefix, Root Word, and Suffix Study Sheet

---

Name: \_\_\_\_\_

Date: \_\_\_\_\_

A **prefix** is a word part with a specific meaning at the beginning of a word.

A **suffix** is a word part with a specific meaning at the end of a word.

A **root word** is the main part of a word that contains its core meaning. Sometimes it is a word on its own, as in *unbelievable* (*believe* is the root word), and sometimes it cannot stand alone, as in *relocation* (*loc* is the root word). In either case, prefixes and suffixes can be added to root words, which might change either the meaning of the word (*reactivate*, *deactivate*) or its grammatical function (*transports* = present tense, *transported* = past tense, *transportation* = noun). Sometimes spelling changes when suffixes are added to root words (*noise*, *noisy*).

Learning **root words**, **prefixes**, and **suffixes** can help you because:

- If you recognize these word parts, it is easier to figure out what a word you don't know means.
- They can help you to spell words because you'll remember patterns.

**Instructions:** As you read this paragraph, underline all words that have prefixes or suffixes. Write them below the paragraph and then write a definition of the word. If you do not know the definition, use the Make-a-Word Game Chart to help you guess.

## The Garbage Problem

Improper garbage disposal can cause contamination of subterranean water sources. Relocating garbage dumps doesn't necessarily solve this incredibly unhealthful problem. Laws preceding the discovery of this problem were predictably relaxed in terms of garbage disposal. Since the discovery, authorities have proceeded to toughen these laws and have injected funds into reevaluating ongoing practices. Interjection of environmental organizations has helped to convince an incredulous public of the depth of the problem and the need to recycle. Some garbage dumps have receded in size, but most have increased as the unbelievable amount of garbage produced continues to multiply unnecessarily.

Words with prefixes or suffixes

Meaning



# Make-a-Word Game Chart

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Instructions:** Fill in the definitions of the prefixes, root words, and suffixes as has been done for you in the first row using the following websites:

- Root Words, Prefixes, Suffixes (<http://www.betterendings.org/homeschool/words/root%20words.htm>)
- Spelling it Right: Prefixes (<http://www.spellitright.talktalk.net/#prefixes>)
- Spelling it Right: Suffixes (<http://www.spellitright.talktalk.net/#suffixes>)
- Most Common Prefixes and Suffixes  
([http://teacher.scholastic.com/reading/bestpractices/vocabulary/pdf/prefixes\\_suffixes.pdf](http://teacher.scholastic.com/reading/bestpractices/vocabulary/pdf/prefixes_suffixes.pdf))

PREFIX – meaning	ROOT WORD – meaning	SUFFIX – meaning
IN – not	CRED – believe	IBLE – possible to
IN –	CRED –	ULOUS –
SUB –	TERR –	ANEAN –
TRANS –	PORT –	ATION –
RE –	CONSIDER –	ATION –
IN –	COMPLETE – (remove e to add suffix)	ION – (also <i>tion</i> )
UN –	BELIEVE – (remove e to add suffix)	ABLE – (also <i>table</i> )
DE –	ACTIVATE – (remove e to add suffix)	TION – (also <i>ion</i> )
RE –	LAX –	ATION –
RE –	ACT –	ION – (also <i>tion</i> )
PRE –	CED –	ING – forms present participle
PRO –	CEED –	ING – forms present participle
RE –	CED –	ING – forms present participle
INTER –	CED –	ING – forms present participle
PRE –	DIC –	TION – (also <i>ion</i> )
PRE –	DIC –	TABLE – (also <i>able</i> )
RE –	JECT –	ION – (also <i>tion</i> )
IN –	JECT –	ION – (also <i>tion</i> )
PRO –	JECT –	ION – (also <i>tion</i> )
RE –	LOC –	ATION –

## Functions



### Vocabulary

Input = x value, the value that is put in, independent variable

Output = y value, the result, dependent variable

Domain = x-coordinates

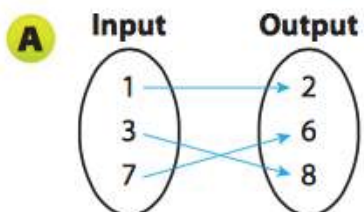
Range = y-coordinates

A **function** is a rule, which assigns exactly 1 output for each input.

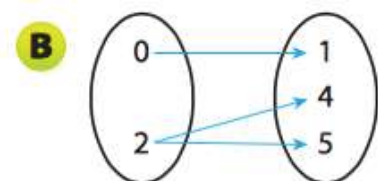
- Functions can be linear equations ( $y=mx+b$ ) ex. a straight line, proportional relationship
- Functions can also be non-linear (equations with exponents) ex.  $A=s^2$ , non-proportional relationships, curved lines

### Examples of functions:

#### **Mapping**



Since each input value is paired with only one output value, the relationship is a function.



Since 2 is paired with more than one output value (both 4 and 5), the relationship is not a function.

## Tables

**A**

Input	Output
5	7
10	6
15	15
20	2
25	15

Since 15 is a repeated output value, one output value is paired with two input values. If this occurs in a relationship, the relationship can still be a function.

Since each input value is paired with only one output value, the relationship is a function.

**B**

Input	Output
1	10
5	8
4	6
1	4
7	2

Since 1 is a repeated input value, one input value is paired with two output values. Look back at the rule for functions. Is this relationship a function?

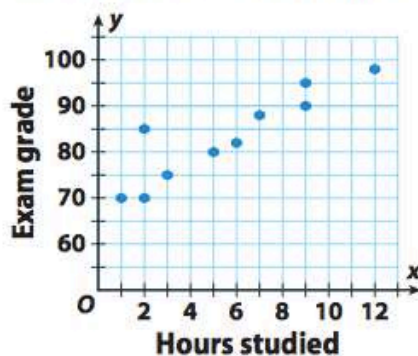
Since the input value 1 is paired with more than one output value (both 10 and 4), the relationship is not a function.

**The graph shows the relationship between the number of hours students spent studying for an exam and the exam grades. Is the relationship represented by the graph a function?**

The input values are the number of hours spent studying by each student. The output values are the exam grades. The points represent the following ordered pairs:

(1, 70)	(2, 70)	(2, 85)	(3, 75)	(5, 80)
(6, 82)	(7, 88)	(9, 90)	(9, 95)	(12, 98)

**Hours Studied and Exam Grade**



Notice that 2 is paired with both 70 and 85, and 9 is paired with both 90 and 95. Therefore, since these input values are paired with more than one output value, the relationship is not a function.

\*For graphs we can also perform the **vertical line test** to quickly determine if the relationship is a function\*. If a vertical line is drawn and two points are connected then it is **NOT** a function. For example if a line is drawn through  $x=2$  in the above graph, then the line would go through two points, so it is not a function.

### **Comparing Functions:**

You may see functions algebraically, graphically, numerically in tables or by verbal descriptions. To compare these functions we look at their rate of change or their slopes (m).

Example:

### **Comparing Functions**

6. Which function is changing more quickly? Explain.

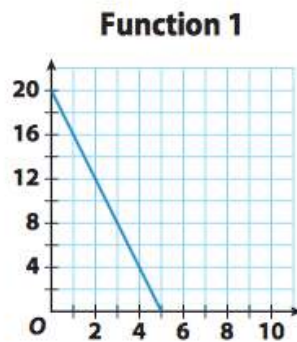
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Function 2	
Input, $x$	Output, $y$
2	11
3	6.5
4	2

Quentin is choosing between buying books at the bookstore or buying online versions of the books for his tablet. The cost,  $y$  dollars, of ordering books online for  $x$  books is  $y = 6.95x + 1.50$ . The cost of buying the books at the bookstore is shown in the table. Which method of buying books is more expensive if Quentin wants to buy 6 books?

Cost of Books at the Bookstore					
Books, $x$	1	2	3	4	5
Cost (\$), $y$	7.50	15.00	22.50	30.00	37.50

One last thing, let's talk about **domain and range**!

The Domain- Your input values.

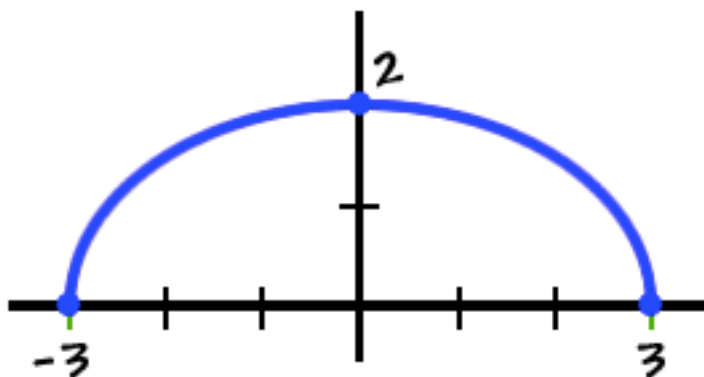
The Range- Your output values.

In Function 2 above.... These would be:

Domain  $\{2, 3, 4\}$

Range  $\{11, 6.5, 2\}$

Notice that we write them with braces instead of parenthesis.



Practice with functions:

Explain whether the following relationships represent functions.

(WORK THROUGH THESE EXAMPLES WITH YOUR CLASS. YOU CAN USE MAPPING AND GRAPHS TO HELP SHOW WHETHER THESE RELATIONSHIPS ARE FUNCTION)

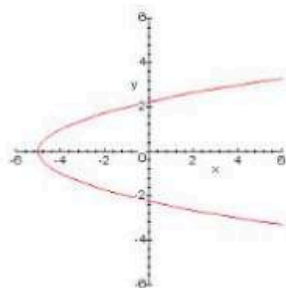
1.  $\{ (1, 2), (2, 3), (3, 4), (4, 5) \}$

2.  $\{ (1, 2), (2, 3), (1, 5), (3, 7) \}$

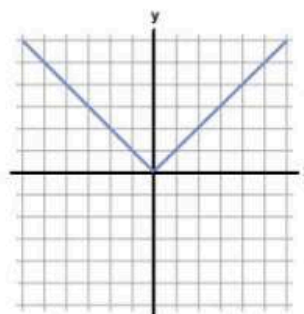
3.

X	Y
2	10
4	6
6	2
8	-2

4.



5.



Examples for students to work through on their own:

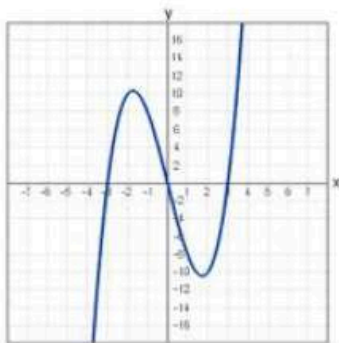
1.  $\{ (3, 6), (35, 64), (1, 1), (21, 7) \}$

2.  $\{ (2, 9), (3, 18), (4, 27), (2, 36) \}$

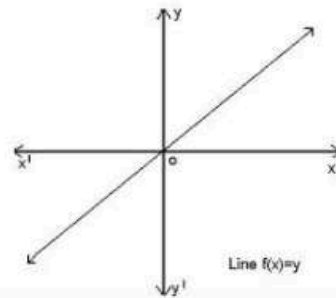
3.

X	Y
8	8
15	8
22	51
29	22

4.

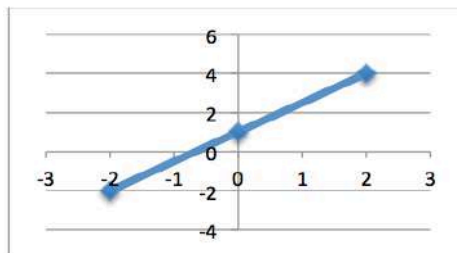


5.



1. Order functions A, B, C, and D from least to greatest rate of change.

A.



B.  $y = \frac{1}{2}x - \frac{1}{4}$

C.

X	-2	0	2	4
Y	7	9	11	13

D. As  $x$  increases by 3 units,  $y$  increases by 2 units.



2. Order the stocks from greatest to least rate of price increase.

**Alpha Inc.**

Week	0	1	2	3	4
Price \$	16	19	22	25	28

**Delta Corp.**

Week	0	1	2	3	4
Price \$	21	16.5	12	7.5	3

**Beta Co.**

A starting price of \$54 decreases weekly by \$2.50.

**Gamma Inc.**

$D = 7/2 w - 27$  (w is weeks, D is dollars)

## Identify Functions

**Study the example problem showing how to determine whether a relationship is a function. Then solve problems 1–7.**

### Example

Describe the relationship shown in each table. Is the relationship a function? Explain.

The input identifies the hours, and the output gives the cost for those hours. The relationship is a function because there is only one output for each input.

**Table A**

Hours (input)	1	2	3	4	5
Cost (output)	\$3	\$6	\$9	\$12	\$15

The input identifies the week and the output gives the growth for each week. The relationship is a function because there is only one output for each input.

**Table B**

Week (input)	1	2	3	4	5
Plant Growth in Inches (output)	4	3.25	2	2	1.75

- 1** Can you represent either of the functions in the example problem with an equation? Explain.

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- 2** Suppose you reverse the inputs and outputs in Table B. Would the relationship be a function? Explain.

---

- 3** The table shows the number of concert tickets sold by five students. Is the relationship a function? Explain.

Student (input)	1	2	3	4	5
Tickets (output)	12	18	12	22	16

---

### Vocabulary

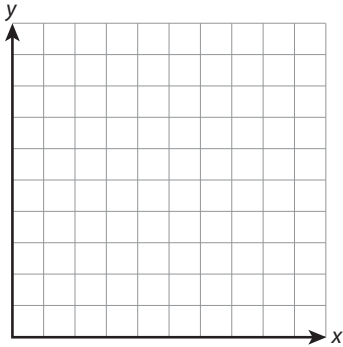
**function** a rule that produces exactly one output for each input.

Solve.

Use the following situation to solve problems 4–5.

The table shows the number of calories in different numbers of servings of blueberries.

Servings (input)	1	2	3	4	5
Calories (output)	21	42	63	84	105



4 On the blank graph to the right, add a title and then label and number the axes. Then plot the ordered pairs on the graph.

5 Explain whether the relationship is a function. Can you represent the data with an equation? If so, write the equation.

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6 Substitute values into the equation  $y = x - 3$  to complete the table. Then state whether the equation represents a function. Explain your reasoning.

x (input)	-2	-1	0	1	2
y (output)					

---

---

7 Complete the table to show a relationship that is a function that you haven't used yet. Be sure that you can represent your function with an equation.

x (input)	1	2	3	4	5
y (output)					

Describe the relationship between the input and output values of your function. Then represent your function with an equation.

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## Reason and Write

**Study the example. Underline two parts that you think make it a particularly good answer and a helpful example.**

**Example**

An object traveling at the speed of sound at sea level travels about 20 kilometers in 1 minute. Write equations that can be used to find the following:

- the distance when given the time
- the time when given the distance

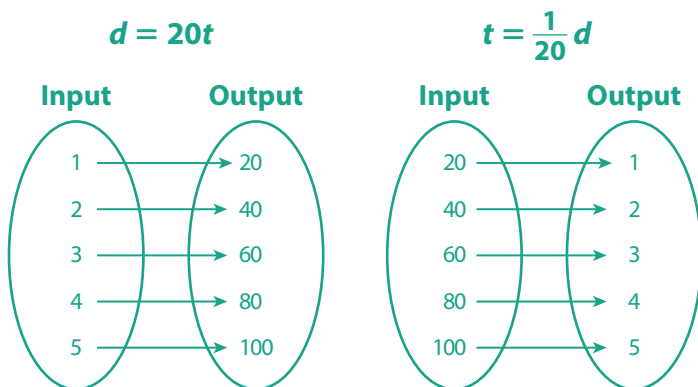
Use a table, diagram, or graph to show the two relationships. Then describe the relationships. Explain whether or not the relationships are functions.

**Show your work.** Use a table, diagram, or graph as well as words and numbers to explain your answer.

**Possible answer: Let  $d$  = distance and  $t$  = time.**

**An equation for the distance given the time is  $d = 20t$  and**

**an equation for the time given the distance is  $t = \frac{1}{20}d$ .**



**The distance is 20 times the time, and the time is  $\frac{1}{20}$  of the distance.**

**In both relationships, there is only one possible output for each input, so both are functions.**

Where does the example ...

- answer all of the parts of the problem?
- use a table, diagram, or graph to explain?
- use words to explain?
- use numbers to explain?



## Compare Negative and Positive Rates of Change

**Study the example problem showing how to compare two functions. Then solve problems 1–6.**

### Example

Mr. Allen bought a new computer. His monthly payment plan is shown in the table.

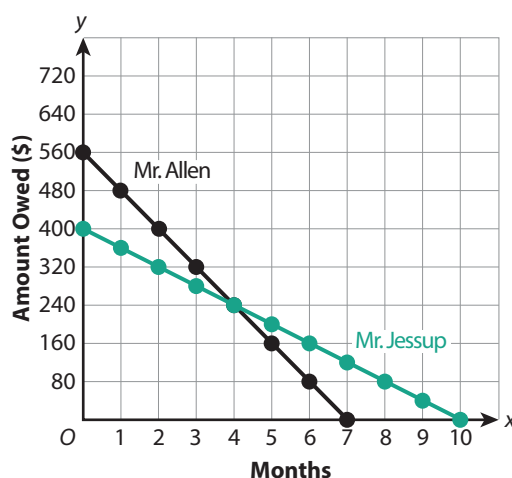
Month	0	1	2	3	4	5	6	7
Amount Mr. Allen Owes (\$)	560	480	400	320	240	160	80	0

Mr. Jessup buys a new computer for \$400. He makes monthly payments of \$40 until the computer is paid for. Compare the initial values and rates of change of each function.

You can graph both functions to show that the amount Mr. Allen owes starts at \$560 and decreases \$80 per month. The amount that Mr. Jessup owes starts at \$400 and decreases \$40 each month.

Mr. Allen's initial value is \$160 more than Mr. Jessup's. Mr. Allen's rate of change is greater than Mr. Jessup's rate of change.

**Payment Plans**



- 1** What do the initial values mean in the context of the example problem?

\_\_\_\_\_

- 2** Do the functions in the example show positive or negative rates of change? Explain.

\_\_\_\_\_

- 3** Write an equation for each function, where  $x$  is the number of months and  $y$  is the amount owed.

Mr. Allen's plan: \_\_\_\_\_

Mr. Jessup's plan: \_\_\_\_\_

## Solve.

- 4 Below are two companies' rates to rent a bicycle. How much does it cost per hour to rent a bicycle at Company A? What is the cost to rent a bicycle for 6 hours from each company?

**Company A:**  $c = 5h + 4$ , where  $c$  = total cost (in dollars) and  $h$  = number of hours

**Company B:** \$6 per hour per bicycle

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- 5 Roy wants to buy a new television for \$300. Two stores offer different payment options. Compare the initial values and rates of change.

Store A Payment Plan							
Month	0	1	2	3	4	5	6
Amount Owed (\$)	300	250	200	150	100	50	0

**Show your work.**

### Store B Payment Plan

Pay \$100 at the time of purchase. Pay \$50 per month until the television is paid for.

Solution: \_\_\_\_\_

- 6 Most plumbing companies charge a fee to come to your house plus a charge per hour of work. The fees and charges for two plumbing companies are shown.

Write an equation for each company, where  $c$  = total cost (in dollars) and  $h$  = number of hours. Explain what the initial values and rates of change mean in this context.

Company A: \_\_\_\_\_

Company B: \_\_\_\_\_

---

### Company A

Fee: \$50

Charge per hour: \$40

### Company B

Fee: \$25

Charge per hour: \$50



Name : \_\_\_\_\_

Score : \_\_\_\_\_

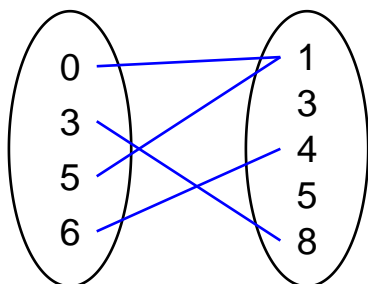
Teacher : \_\_\_\_\_

Date : \_\_\_\_\_

## Domain and Range Mapping Diagrams

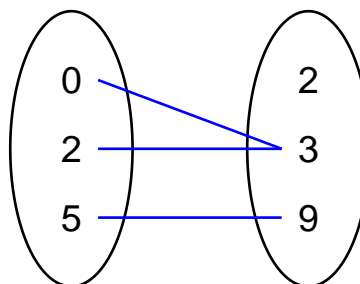
Determine whether each diagram depicts a function or not.

1)



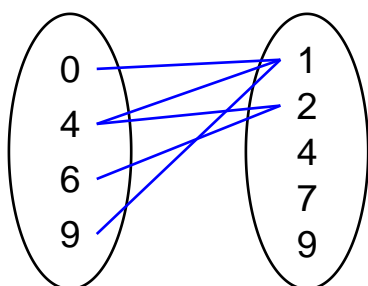
Function: \_\_\_\_\_

2)



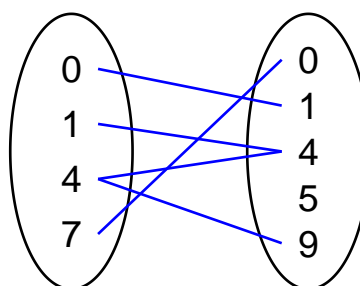
Function: \_\_\_\_\_

3)



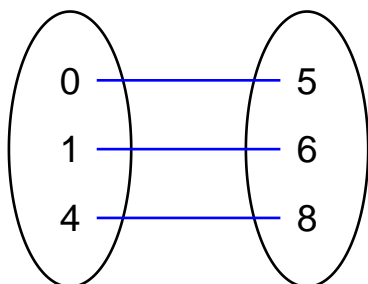
Function: \_\_\_\_\_

4)



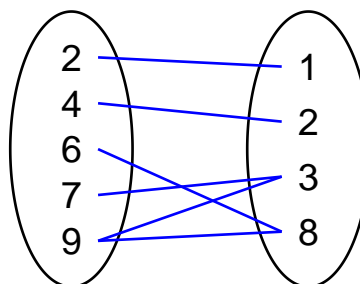
Function: \_\_\_\_\_

5)



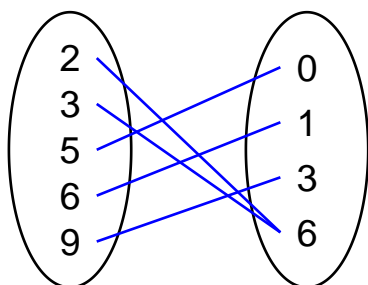
Function: \_\_\_\_\_

6)



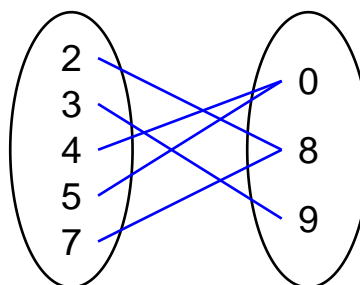
Function: \_\_\_\_\_

7)



Function: \_\_\_\_\_

8)



Function: \_\_\_\_\_



# Unit 2 Game

Name: \_\_\_\_\_

## Slippery Slopes

**What you need:** Recording Sheet, 2 number cubes (one labeled 1, -2, 3, -4, -5, 6 and the other labeled -1, 2, -3, 4, 5, -6)

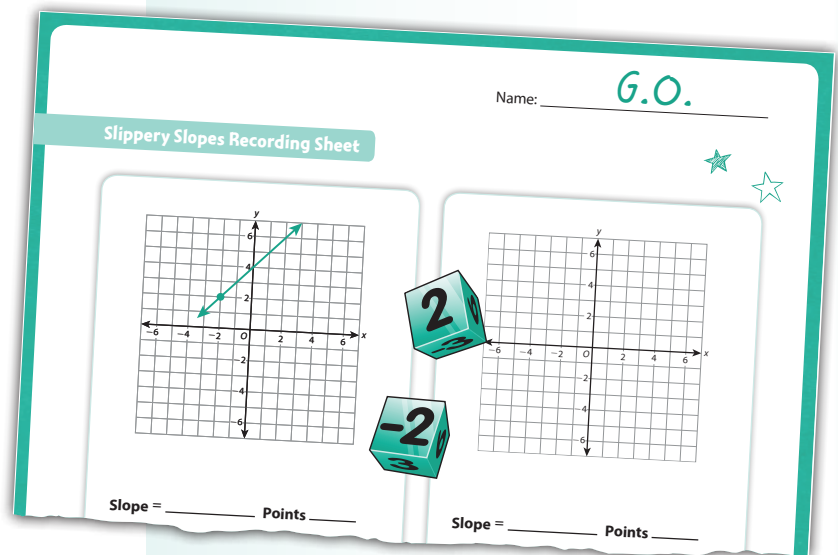
### Directions

- Your goal is to plot ordered pairs, graph a line, and earn points by finding the slope of the line.
- Players take turns rolling the two number cubes.
- Use the rolled numbers to make an ordered pair, choosing which is the x-coordinate and which is the y-coordinate.
- Plot the ordered pair on any blank coordinate grid on the Recording Sheet. You can also plot an ordered pair on a grid that already has one ordered pair plotted.
- When there are two points plotted on a coordinate grid, connect them and find the slope of the line.
- Players score points for the slope of each line according to the chart below.

#### Points Earned

$\text{slope} < -2$  ..... 1 point  
 $\text{slope between } -2 \text{ and } 1$  ..... 2 points  
 $\text{slope of } 1$  ..... 3 points  
 $\text{slope between } 1 \text{ and } 2$  ..... 2 points  
 $\text{slope of } 2$  ..... 3 points  
 $\text{slope} > 2$  ..... 1 point

- Play until both players have graphed 4 lines. The player with the most points wins.

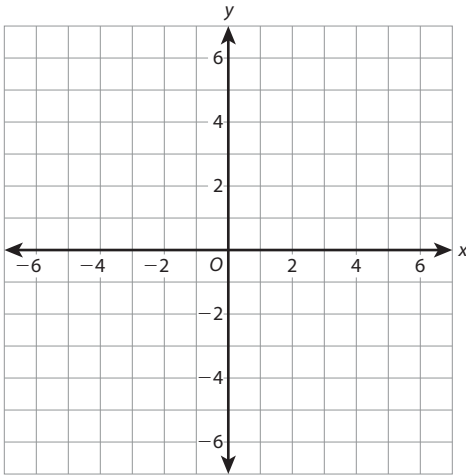


I plotted the point  $(-2, 2)$ . A line with a slope of 1 or 2 gets the highest score. I sketched a line with a slope of 1 to see some other points that I can try to plot on this grid.

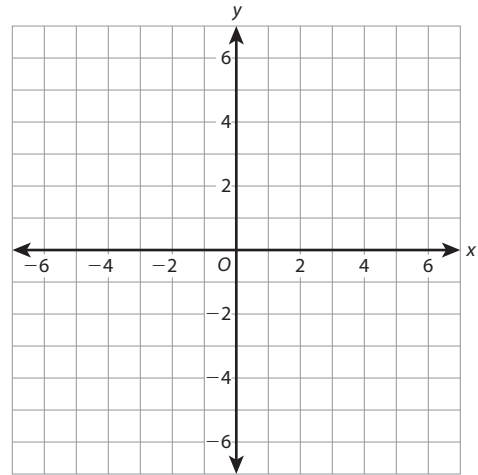


Name: \_\_\_\_\_

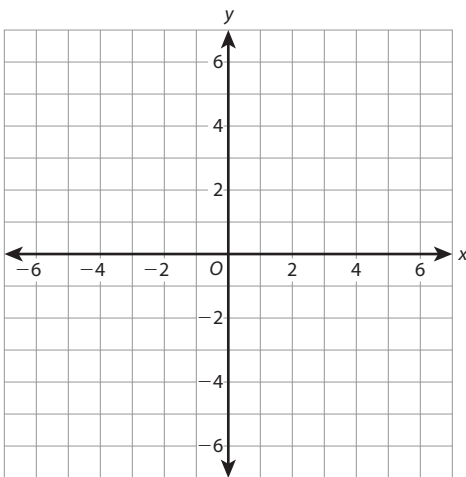
## Slippery Slopes Recording Sheet



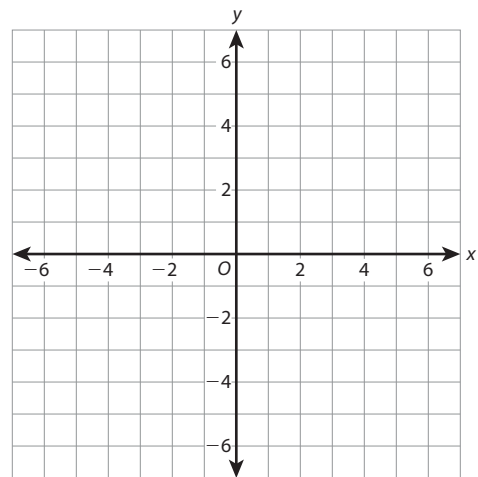
Slope = \_\_\_\_\_ Points \_\_\_\_\_



Slope = \_\_\_\_\_ Points \_\_\_\_\_



Slope = \_\_\_\_\_ Points \_\_\_\_\_



Slope = \_\_\_\_\_ Points \_\_\_\_\_



# Unit 2 Practice

Name: \_\_\_\_\_

## Functions

In this unit you learned to:	Lesson
explain what a function is.	6
compare properties of two functions, for example: compare rate of change of a function shown by a graph to the rate of change of a function shown by a table.	7
study the graph of a function and describe it as increasing or decreasing, linear or nonlinear.	8, 9, 10

Use these skills to solve problems 1–6.

- 1 Consider the values in the table.

<b>x (input)</b>	−2	−1	0	1	2
<b>y (output)</b>	4	1	0	1	4

- a. Does the table represent a function? Explain.

\_\_\_\_\_

- b. If you switched the input and output values, would the table represent a function? Explain.

\_\_\_\_\_

- 2 The equation  $c = 50 + 35m$  shows the amount  $c$  that Dina paid for her health club membership after  $m$  months. The table shows the amount Judy paid for her health club membership.

<b>Number of Months</b>	0	1	2	3
<b>Amount Judy Paid</b>	\$80	\$105	\$130	\$155

Which statement is true? Select all that apply.

- A Dina paid a higher amount to join the health club.
- B Judy pays more per month to be a member.
- C After 1 month, Judy has paid more than Dina.
- D After 4 months, Dina has paid more than Judy.

## Solve.

- 3 Which function is linear? Select all that apply.

**A**  $y = 3x - 2$       **D**  $y = \frac{1}{3}x^3 - 2$   
**B**  $y = x^2 + 1$       **E**  $y = \frac{5}{x} + 5$   
**C**  $y = 1.5 - 0.75x$       **F**  $y = x + 2x$

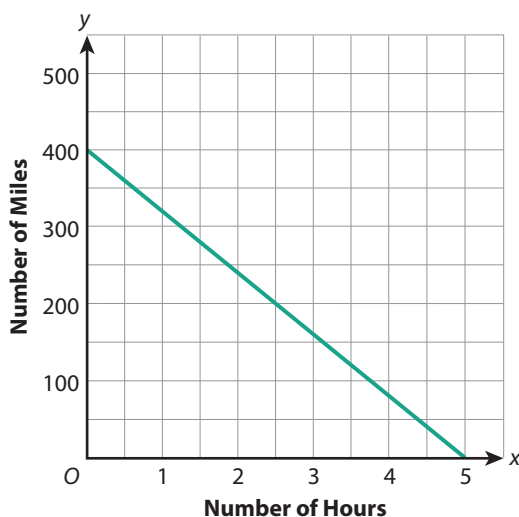
- 4 The table shows a linear function.

$x$ (input)	1	3	6
$y$ (output)	5	11	20

What are the slope and the  $y$ -intercept?

\_\_\_\_\_

- 5 The graph shows the time and the distance a train is from its destination city as it travels between two cities.



Identify the slope and  $y$ -intercept and explain what each means in the context of the problem. Then write an equation for the line.

\_\_\_\_\_

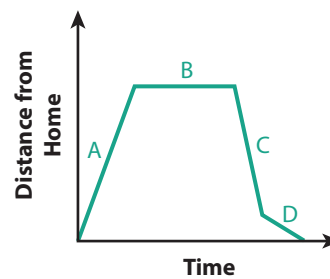
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- 6 Jordan rode his bike to the park. The graph shows his distance from home on his trip.



Use the graph and describe what happened at each part of the trip.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Unit 2 Performance Task

Name: \_\_\_\_\_

**Answer the questions and show all your work on separate paper.**

You are looking to replace your showerhead with a newer, more efficient one. Here are three different models that you are considering.

### **Water Miser Showerhead**

Uses only 6 gallons of water in 3 minutes.

### **Watersaver Showerhead**

Uses only 5 gallons of water in 2 minutes.

### **Waterstream Showerhead**

Uses only 7.5 gallons of water in 5 minutes.

Compare the water usage for each of the three showerheads above.

- Find the amount of water each showerhead uses in 1 minute.
- For each showerhead, write an equation to represent the amount of water used (gallons) as a function of time (minutes).
- Use the equation to show how much water you would use to run the shower for 6, 8, 10, and 12 minutes with each showerhead.
- Decide which showerhead you would buy. Support your decision with specific reasons.

## Reflect on Mathematical Practices

After you complete the task, choose one of the following questions to answer.

- 1 Reason Mathematically** How does finding the unit water usage rate help you solve other parts of the problem?
- 2 Argue and Critique** What criteria did you use to decide which showerhead to buy?

## Checklist

Did you ...

- ☐ complete all parts of the problem?
- ☐ check your calculations?
- ☐ provide support for your decision?

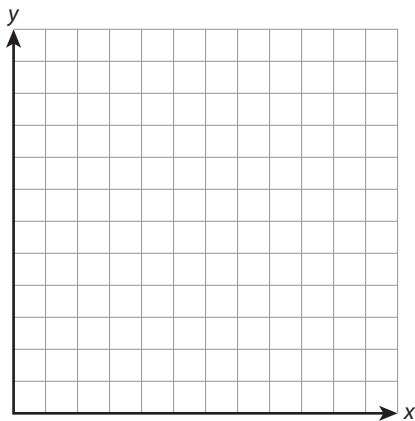
## Performance Task Tips

**Word Bank** Here are some words that you might use in your answer.

rate	equation	rate of change
unit rate	solution	function

**Models** Here are some models that you might use to find the solution.

Minutes				
Water Usage				



**Sentence Starters** Here are some sentence starters that might help you explain your work.

In one minute, \_\_\_\_\_

To take a 10-minute shower, \_\_\_\_\_

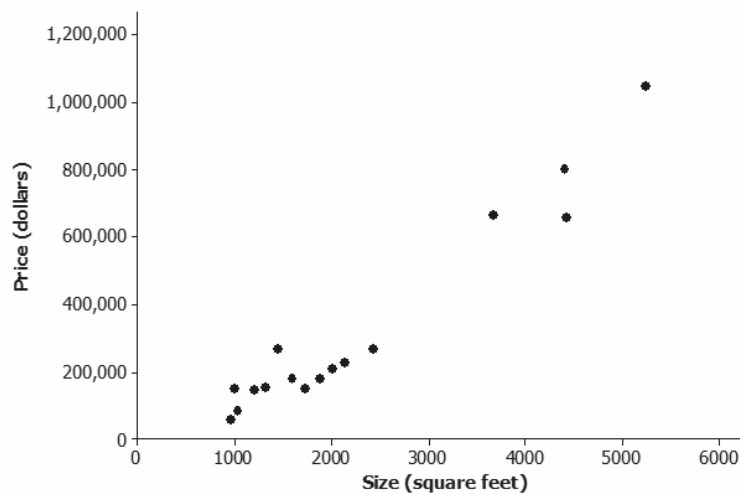
I would buy \_\_\_\_\_ because \_\_\_\_\_

**Lesson Summary**

- A scatter plot might show a linear relationship, a nonlinear relationship, or no relationship.
- A positive linear relationship is one that would be modeled using a line with a positive slope. A negative linear relationship is one that would be modeled by a line with a negative slope.
- Outliers in a scatter plot are unusual points that do not seem to fit the general pattern in the plot or that are far away from the other points in the scatter plot.
- Clusters occur when the points in the scatter plot appear to form two or more distinct clouds of points.

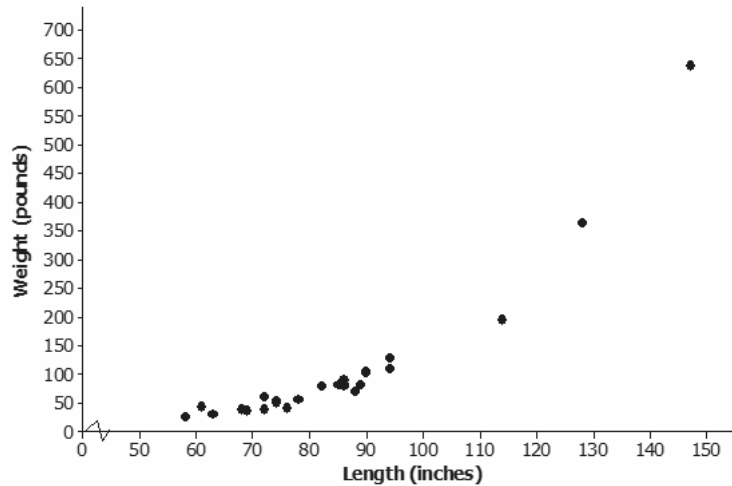
**Problem Set**

1. Suppose data was collected on size in square feet ( $x$ ) of several houses and price in dollars ( $y$ ). The data was then used to construct the scatterplot below. Write a few sentences describing the relationship between price and size for these houses. Are there any noticeable clusters or outliers?



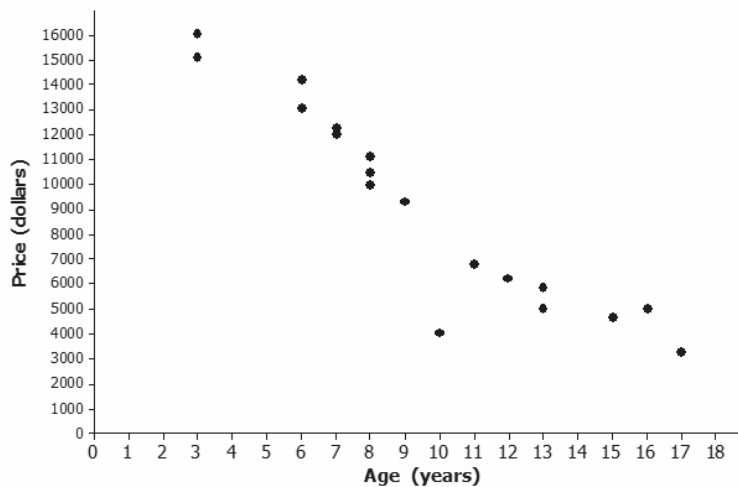


2. The scatter plot below was constructed using data on length in inches ( $x$ ) of several alligators and weight in pounds ( $y$ ). Write a few sentences describing the relationship between weight and length for these alligators. Are there any noticeable clusters or outliers?



Data Source: Exploring Data, Quantitative Literacy Series, James Landwehr and Ann Watkins, 1987.

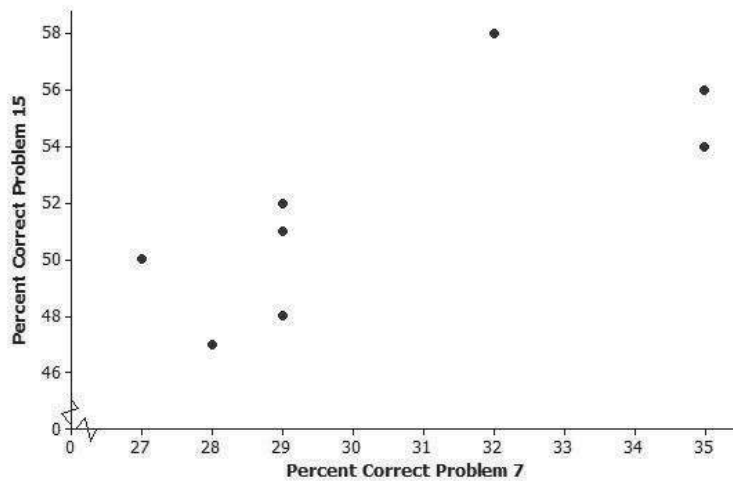
3. Suppose the scatter plot below was constructed using data on age in years ( $x$ ) of several Honda Civics and price in dollars ( $y$ ). Write a few sentences describing the relationship between price and age for these cars. Are there any noticeable clusters or outliers?



4. Samples of students in each of the U.S. states periodically take part in a large-scale assessment called the National Assessment of Educational Progress (NAEP). The table below shows the percent of students in the northeastern states (as defined by the U.S. Census Bureau) who answered Problems 7 and 15 correctly on the 2011 eighth-grade test. The scatter plot shows the percent of eighth-grade students who got Problems 7 and 15 correct on the 2011 NAEP.

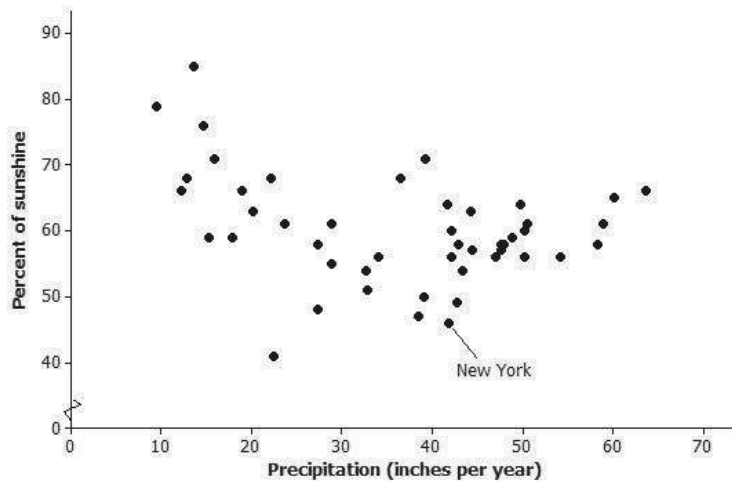
State	Percent Correct Problem 7	Percent Correct Problem 15
Connecticut	29	51
New York	28	47
Rhode Island	29	52
Maine	27	50
Pennsylvania	29	48
Vermont	32	58
New Jersey	35	54
New Hampshire	29	52
Massachusetts	35	56

Percent Correct for Problems 7 and 15 on 2011 Eighth-Grade NAEP



- Why does it appear that there are only eight points in the scatter plot for nine states?
- What is true of the states represented by the cluster of five points in the lower left corner of the graph?
- Which state did the best on these two problems? Explain your reasoning.
- Is there a trend in the data? Explain your thinking.

5. The plot below shows the mean percent of sunshine during the year and the mean amount of precipitation in inches per year for the states in the United States.



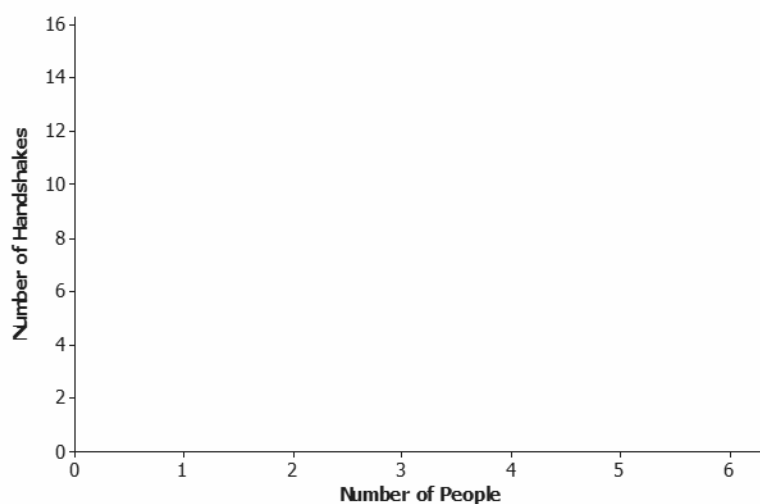
Data source: [www.currentresults.com/Weather/US/average-annual-state-sunshine.php](http://www.currentresults.com/Weather/US/average-annual-state-sunshine.php)  
[www.currentresults.com/Weather/US/average-annual-state-precipitation.php](http://www.currentresults.com/Weather/US/average-annual-state-precipitation.php)

- Where on the graph are the states that have a large amount of precipitation and a small percent of sunshine?
  - The state of New York is the point (46, 41.8). Describe how the mean amount of precipitation and percent of sunshine in New York compare to the rest of the United States.
  - Write a few sentences describing the relationship between mean amount of precipitation and percent of sunshine.
6. At a dinner party, every person shakes hands with every other person present.
- If three people are in a room and everyone shakes hands with everyone else, how many handshakes take place?
  - Make a table for the number of handshakes in the room for one to six people. You may want to make a diagram or list to help you count the number of handshakes.

Number People	Handshakes

Number People	Handshakes

- c. Make a scatter plot of number of people ( $x$ ) and number of handshakes ( $y$ ). Explain your thinking.



- d. Does the trend seem to be linear? Why or why not?

Name \_\_\_\_\_

# Constitution Day

Read the text below with your class.

Article 1, Section 2, Clause 3

*Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers .... The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner as they shall by Law direct.*

1. Choose three items on the list in **Activity Item: Uses of Census Bureau Data** and explain how census data might affect the funding for those programs.
2. Looking at the same three areas you chose in Question #1, why is it important that we have an accurate count of the population to inform decisions about funding for these different programs?



3. What do you think would happen in a community where not everyone was counted accurately? How would this affect the federal funding for community resources?
  
  
  
  
  
  
  
  
  
  
4. Why is it important that the census is required by the U.S. Constitution and not simply something the country does?

## Home Extension

Take your student worksheet home and share it with an adult in your home. Discuss what you learned about the decennial census and why it's important that everyone in your home is counted accurately in the 2020 Census.





## Activity Item: Uses of Census Bureau Data

Program Name	What It Does	Fiscal 2015 Funds
Highway Planning and Construction	Helps state departments of transportation plan, build, and repair national highways	\$38,479,013,855
National School Lunch Program	Provides reduced-price or free lunches to children each day at school	\$18,915,944,292
Temporary Assistance for Needy Families	Helps families until they can become self-sufficient	\$17,225,738,021
Special Education Grants to States	Provides grants to help cover the cost of special education and education for students with disabilities	\$11,382,885,850
Head Start	Promotes school readiness for children under 5 in low-income families	\$8,538,887,781
State Children's Health Insurance Program	Provides health coverage to eligible children	\$4,212,457,713
Hurricane Sandy Community Development Block Grant Disaster Recovery Grants	Develops viable urban communities and expands economic opportunities for people of low and moderate income who were affected by a disaster	\$3,347,522,549
Unemployment Insurance	Provides temporary financial assistance for people who are unemployed through no fault of their own	\$3,015,880,910
Improving Teacher Quality State Grants	Ensures that all students are taught by qualified teachers, principals, etc.	\$2,321,910,864
Federal Transit Capital Investment Grants	Funds things like railways, streetcars, and buses	\$1,491,401,116
Rural Rental Assistance Payments	Reduces rent paid by low-income families who live in Rural Rental Housing or Farm Labor Housing	\$795,000,475

Source: *U.S. Census Bureau, Uses of Census Bureau Data in Federal Funds Distribution*  
<https://www.census.gov/library/working-papers/2017/decennial/census-data-federal-funds.html>

Programs like those listed in the table above use Census Bureau data to direct funding to specific groups or places. Examples of how these programs use Census Bureau data include the following:

- Programs use a population count, such as “areas with a population of 50,000 or more.”
- Programs use characteristics of the population, such as the number of people between the ages of 5 and 17, or the number of homes built before 1940.
- Programs divide another estimate, such as income or the number of homes, to create a per capita (for each person) estimate.

## The Fastest Man in the World

Usain Bolt has run faster than any human ever recorded on the planet! In 2009, the Jamaican sprinter set the world record for the fastest time recorded in 100 meters.

### Calculating speed

Watch Usain Bolt's record-breaking race here:  
<https://www.youtube.com/watch?v=jiQ-4TFeeO8>

Remember that if you know the distance and time, you can calculate the speed. This is how we calculated Bolt's average speed in his 100-meter world record race.

Event	Distance (m)	Time (s)	Speed distance (m)/time (s) = speed (m/s)
100 m sprint	100	9.58	100 m/9.58 s = <b>10.44 m/s</b>

In reality, though, Bolt didn't go from 0 m/s to 10.44 m/s right away, and he didn't run at the same speed for the entire race. Like all runners, he *accelerated* from the start and ran at different speeds throughout the race. We can analyze these speeds using data collected at different times during the race.

### Calculating acceleration

If we look at how long it took Bolt to travel every 10 m of the race, we get a better idea of how his speed changed during the race. Use the following data to calculate Bolt's speed and acceleration for each 10-meter section (or "split") of the 100-meter race at the 2009 IAAF World Championships in Berlin.

NOTE: Check notebook sheets 2, 5, and 7 if you need help remembering how to do the calculations.

Time $t$ (s)	Position $x$ (m)	Change in time $\Delta t$ (s)	Change in position $\Delta x$ (m)	Split speed $v$ (m/s)	Change in speed $\Delta v$ (m/s)	Acceleration $a$ (m/s <sup>2</sup> )
0	0	-	-	-	-	-
1.89	10	1.89	10			
2.88	20	0.99	10			
3.78	30	0.90	10			
4.64	40	0.86	10			
5.47	50	0.83	10			
6.29	60	0.82	10			
7.10	70	0.81	10			
7.92	80	0.82	10			
8.75	90	0.83	10			
9.58	100	0.83	10			

### Think Questions

- When did he accelerate the most?
- When did he slow down (decelerate)?

$$v = \frac{\Delta x}{\Delta t}$$

$v$  = speed  
 $\Delta x$  = change in position  
 $\Delta t$  = change in time

$$a = \frac{\Delta v}{\Delta t}$$



3. When did he not accelerate at all?
4. Which 10-meter section was his slowest average speed? What is your evidence?
5. Which was faster: his average speed for 10 meters or for the entire race?  
Support your answer with data.

OPTIONAL: Create a distance vs. time graph of Bolt's race data.

# Disinformation Nation: Separating Politics & Propaganda

Students will lay the foundation for informed democratic participation by seeking out information about a current election candidate and weighing whether or not the sources they find are trustworthy.

Propaganda can be defined as messages that serve a particular agenda and are designed to manipulate their targeted audiences.

<https://disinformation-nation.org/>

Explore the “How It Works” and “Why It Matters” sections of Disinformation Nation. To access this page, click on “Propaganda” in the main menu at the top of the homepage, then click on the drop-down options.

You’ll be focusing on one of the biggest potential impacts of propaganda: how it can affect our democracy.

Why is it important for citizens living in a democracy to be informed? How can propaganda make it harder to make a good decision as a voter? Elections generate a wide range of content about the candidates. Some of this content is objective and helpful when forming opinions. Some is biased and may even rise to the level of propaganda. Let’s see if you can tell the difference.

1. For this exercise, we’ll examine the upcoming presidential election.
2. Choose a candidate to examine; Donald Trump or Joe Biden. Find two different sources of information about your candidate and answer the worksheet questions for each source you find.

## **DISCUSSION QUESTIONS**

- Do you agree with your classmates’ opinions about which sources were or were not trustworthy? Why or why not?
- Did you find it hard to determine which sources were trustworthy? Why or why not?
- Do you see any patterns among the sources of information that you and your classmates think are trustworthy versus those you don’t? Try to create a short set of guidelines for telling the difference.
- Do you think that any of the sources your class found meet the definition of propaganda? Do you see any of the SEED tactics (Simplification, Exaggeration, Exploitation and Division)?
- Do you think that being informed about a candidate or issue can make you more immune to propaganda about that candidate or issue? Explain why or why not.
- Why would it be risky to rely on a single source when trying to learn about candidates or election issues?
- What tips would you give to voters who want to make sure they make solid decisions when they cast their ballots? How can they tell the difference between reliable information and propaganda?
- Would anything you learned in this activity influence how you would vote in this race? Why or why not?

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Information or Manipulation?

The candidate you are focusing on: \_\_\_\_\_

Find two different sources of information about this candidate and answer the sources below.

### **Source 1**

Title: \_\_\_\_\_

Link/Where you found this source: \_\_\_\_\_

List three things this source says about your candidate:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

Do you think the primary purpose of this source is to inform or to persuade? Explain.

Do you think this source is trustworthy? Why or why not?

If you **do** think this source is trustworthy, do you think the information it provides would be helpful to voters? Why or why not?

If you **don't** think it's trustworthy, do you think it is propaganda? (One definition: a message that serves a particular agenda and is designed to manipulate a targeted audience.) Explain.

## Source 2

Title:

Link/Where you found this source:

List three things this source says about your candidate:

1.

2.

3.

Do you think the primary purpose of this source is to inform or to persuade? Explain.





Do you think this source is trustworthy? Why or why not?

If you **do** think this source is trustworthy, do you think the information it provides would be helpful to voters? Why or why not?

If you **don't** think it's trustworthy, do you think it is propaganda? (One definition: a message that serves a particular agenda and is designed to manipulate a targeted audience.) Explain.

# ESL at Home 6-8 Weeks II-12

Use notebook paper to complete these activities. Do one each day!

Monday	Tuesday	Wednesday	Thursday	Friday
<p>Pick a character from a book. Write 3 different messages that character would post on social media! Can include pictures!</p> <div>    </div>	<p>Find <b>10 random food items</b> of your choice in your house. Line them up in alphabetical order. A-Z.</p> <p><b>Example:</b> Crackers, Apple, Banana</p> <p style="text-align: center;">↓</p> <p>Apple, Banana, Crackers</p>	<p>Write a letter to students that will be in 6th grade next year. What do they need to know to be a successful middle schooler or 6th grader?</p> <p>Make sure you share with your teacher!</p>	<p>Create a poster on a piece of paper to persuade others about <b>conservation</b>. It can be about recycling, saving an endangered species, etc.</p> <div>  </div>	<p>Write your own math problem and solve it. Then, write to explain how you solved it.</p> <p><b>Example:</b> <math>5/8 + 7/11 =</math></p> <p>First, _____. Next, _____. Last, _____.</p>
Monday	Tuesday	Wednesday	Thursday	Friday
<p>Rewrite part of a fiction story from a different <b>point of view</b>. Does the story change? What would we learn about different characters? Be creative!</p>	<p>Use things around your house to create an invention to launch items into the air using <b>force</b>. How do you get items to go farther? Less distance? Higher? Sketch and label your invention.</p>	<p>Practice reading aloud to someone in your family. Then, ask your family member questions about the text to see if they were listening!</p>	<p>Find 5 things in your home that have <b>acute angles</b>. Find 5 things in you home that have <b>obtuse angles</b>. Find 5 things in your home with lines that are <b>parallel</b>.</p> <p>Sketch and label these items!</p>	<p>Write your opinion on distance learning. How do you feel about learning from home? Do you like it/dislike it? Why? Write three reasons.</p> <p>I like/dislike distance learning. First, _____ because _____. Another reason I _____ is because _____. Finally, _____.</p>