LOWELL
PUBLIC SCHOOLS

At Home Learning Resources

Grade 7 - Week 10

Content	Time Suggestions
Independent Reading (Read books, watch books read aloud, listen to a book)	At least 20 minutes daily (Could be about science, social studies, etc)
ELA	45 minutes daily
Math	45 minutes daily
Science	45 minutes daily
Social Studies	45 minutes daily
Arts, Physical Education, or **Social Emotional Learning**	30 minutes daily

These are some time recommendations for each subject.
We know everyone's schedule is different, so do what you can.
These times do not need to be in a row/in order, but can be spread throughout the day.
Teachers will suggest which parts of the packet need to be completed or teachers may assign alternative tasks.

Grade 7 ELA Week 10

All previous activities, as well as other resources can be found on the Lowell Public Schools website:
https://www.lowell.k12.ma.us/Page/3803

This week begins a focus on historical fiction reading and writing. Your child should be reading, writing, talking and writing about reading, and exploring new vocabulary each week.

Reading: Students need to read each day. They can read the historical fiction text included in this packet and/or read any of the historical fiction 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 be working on writing historical 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 7 Historical 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 historical fiction story and work to refine it throughout, or might write multiple historical fiction stories, getting better each time.

Word Work: Students can work on learning new vocabulary. Students can study a word that they like or a word they encounter in their reading. Use the vocabulary rhyme organizer to learn more about your word and write a vocabulary rhyme/rap.

Historical Fiction

For example: Historical fiction definition: Historical fiction is an imagined story set in the real world that portrays life as it might have been lived in the past, and focuses on the problems and issues of life in the past.

- Based on real people or events from the past
- Portrays life as it might have been lived in the past
- Focuses on the problems and issues of life in the past
- Has narrative structure with characters, plot [rising action, climax, falling action, resolution], and setting
- Often uses old-fashioned language in dialogue
- Communicates important understandings of history

The above taken from Genre Study, Fountas & Pinnell

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

Readers of Historical Fiction Ask...

What's going on?

What is the historical conflict?

What role does the protagonist play in it?

What's happening that's new?

What's the backstory of the conflict?

What kind of person is the main character?

The character could have... but instead s/he.... This shows that...

What's new for the character?

What's the character's backstory?

What do moments of trouble reveal about the person?

Are there character traits that collide with what's going on?

What are the perspectives of minor characters?

The soldiers learned to survive!

The soldiers learned to kill!

The soldiers DON'T hate the enemy!

Think about, annotate, stop and jot about characters as …

They change and grow in response to their experiences.

They strive for power over their own interactions.

Types of Soft Power
- Will power
- determination
- love
- close friendships
- selflessness
- self-sacrifice

Types of HARD Power
→ violence
→ physical force
→ money
→ strict rules
→ laws
→ punishment
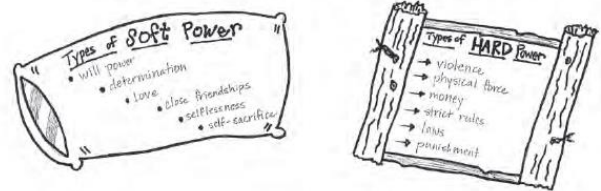
They acknowledge that change can be complicated.

They consider how the past is not dead, but is always with us.

STOP WAR

PEACE NOW

BLACK LIVES MATTER

"The Lottery" (1948)

by Shirley Jackson

The morning of June 27th was clear and sunny, with the fresh warmth of a full-summer day; the flowers were blossoming profusely and the grass was richly green. The people of the village began to gather in the square, between the post office and the bank, around ten o'clock; in some towns there were so many people that the lottery took two days and had to be started on June 2th. but in this village, where there were only about three hundred people, the whole lottery took less than two hours, so it could begin at ten o'clock in the morning and still be through in time to allow the villagers to get home for noon dinner.

The children assembled first, of course. School was recently over for the summer, and the feeling of liberty sat uneasily on most of them; they tended to gather together quietly for a while before they broke into boisterous play. and their talk was still of the classroom and the teacher, of books and reprimands. Bobby Martin had already stuffed his pockets full of stones, and the other boys soon followed his example, selecting the smoothest and roundest stones; Bobby and Harry Jones and Dickie Delacroix-- the villagers pronounced this name "Dellacroy"--eventually made a great pile of stones in one corner of the square and guarded it against the raids of the other boys. The girls stood aside, talking among themselves, looking over their shoulders at rolled in the dust or clung to the hands of their older brothers or sisters.

Soon the men began to gather. surveying their own children, speaking of planting and rain, tractors and taxes. They stood together, away from the pile of stones in the corner, and their jokes were quiet and they smiled rather than laughed. The women, wearing faded house dresses and sweaters, came shortly after their menfolk. They greeted one another and exchanged bits of gossip as they went to join their husbands. Soon the women, standing by their husbands, began to call to their children, and the children came reluctantly, having to be called four or five times. Bobby Martin ducked under his mother's grasping hand and ran, laughing, back to the pile of stones. His father spoke up sharply, and Bobby came quickly and took his place between his father and his oldest brother.

The lottery was conducted--as were the square dances, the teen club, the Halloween program--by Mr. Summers. who had time and energy to devote to civic activities. He was a round-faced, jovial man and he ran the coal business, and people were sorry for him. because he had no children and his wife was a scold. When he arrived in the square, carrying the black wooden box, there was a murmur of conversation among the villagers, and he waved and called. "Little late today, folks." The postmaster, Mr. Graves, followed him, carrying a three- legged stool, and the stool was put in the center of the square and Mr. Summers set the black box down on it. The villagers kept their distance, leaving a space between themselves and the stool. and when Mr. Summers said, "Some of you fellows want to give me a hand?" there was a hesitation before two men. Mr. Martin and his oldest son, Baxter. came forward to hold the box steady on the stool while Mr. Summers stirred up the papers inside it.

The original paraphernalia for the lottery had been lost long ago, and the black box now resting on the stool had been put into use even before Old Man Warner, the oldest man in town, was born. Mr. Summers spoke frequently to the villagers about making a new box, but no one liked to upset even as much tradition as was represented by the black box. There was a story that the present box had been made with some pieces of the box that had preceded it, the one that had been constructed when the first people settled down to make a village here. Every year, after the lottery, Mr. Summers began talking again about a new box, but every year the subject was allowed to fade off without anything's being done.

The black box grew shabbier each year: by now it was no longer completely black but splintered badly along one side to show the original wood color, and in some places faded or stained.

Mr. Martin and his oldest son, Baxter, held the black box securely on the stool until Mr. Summers had stirred the papers thoroughly with his hand. Because so much of the ritual had been forgotten or discarded, Mr. Summers had been successful in having slips of paper substituted for the chips of wood that had been used for generations. Chips of wood, Mr. Summers had argued. had been all very well when the village was tiny, but now that the population was more than three hundred and likely to keep on growing, it was necessary to use something that would fit more easily into he black box. The night before the lottery, Mr. Summers and Mr. Graves made up the slips of paper and put them in the box, and it was then taken to the safe of Mr. Summers' coal company and locked up until Mr. Summers was ready to take it to the square next morning. The rest of the year, the box was put way, sometimes one place, sometimes another; it had spent one year in Mr. Graves's barn and another year underfoot in the post office. and sometimes it was set on a shelf in the Martin grocery and left there.

There was a great deal of fussing to be done before Mr. Summers declared the lottery open. There were the lists to make up--of heads of families. heads of households in each family. members of each household in each family. There was the proper swearing-in of Mr. Summers by the postmaster, as the official of the lottery; at one time, some people remembered, there had been a recital of some sort, performed by the official of the lottery, a perfunctory. tuneless chant that had been rattled off duly each year; some people believed that the official of the lottery used to stand just so when he said or sang it, others believed that he was supposed to walk among the people, but years and years ago this p3rt of the ritual had been allowed to lapse. There had been, also, a ritual salute, which the official of the lottery had had to use in addressing each person who came up to draw from the box, but this also had changed with time, until now it was felt necessary only for the official to speak to each person approaching. Mr. Summers was very good at all this; in his clean white shirt and blue jeans. with one hand resting carelessly on the black box. he seemed very proper and important as he talked interminably to Mr. Graves and the Martins.

Just as Mr. Summers finally left off talking and turned to the assembled villagers, Mrs. Hutchinson came hurriedly along the path to the square, her sweater thrown over her shoulders, and slid into place in the back of the crowd. "Clean forgot what day it was," she said to Mrs. Delacroix, who stood next to her, and they both laughed softly. "Thought my old man was out back stacking wood," Mrs. Hutchinson went on. "and then I looked out the window and the kids was gone, and then I remembered it was the twenty-seventh and came a-running." She dried her hands on her apron, and Mrs. Delacroix said, "You're in time, though. They're still talking away up there."

Mrs. Hutchinson craned her neck to see through the crowd and found her husband and children standing near the front. She tapped Mrs. Delacroix on the arm as a farewell and began to make her way through the crowd. The people separated good-humoredly to let her through: two or three people said. in voices just loud enough to be heard across the crowd, "Here comes your, Missus, Hutchinson," and "Bill, she made it after all." Mrs. Hutchinson reached her husband, and Mr. Summers, who had been waiting, said cheerfully. "Thought we were going to have to get on without you, Tessie." Mrs. Hutchinson said. grinning, "Wouldn't have me leave m'dishes in the sink, now, would you. Joe?," and soft laughter ran through the crowd as the people stirred back into position after Mrs. Hutchinson's arrival.

"Well, now." Mr. Summers said soberly, "guess we better get started, get this over with, so's we can go back to work. Anybody ain't here?"

"Dunbar." several people said. "Dunbar. Dunbar."

Mr. Summers consulted his list. "Clyde Dunbar." he said. "That's right. He's broke his leg, hasn't he? Who's drawing for him?"

"Me. I guess," a woman said. and Mr. Summers turned to look at her. "Wife draws for her husband." Mr. Summers said. "Don't you have a grown boy to do it for you, Janey?" Although Mr. Summers and everyone else in the village knew the answer perfectly well, it was the business of the official of the lottery to ask such questions formally. Mr. Summers waited with an expression of polite interest while Mrs. Dunbar answered.

"Horace's not but sixteen vet." Mrs. Dunbar said regretfully. "Guess I gotta fill in for the old man this year."

"Right." Sr. Summers said. He made a note on the list he was holding. Then he asked, "Watson boy drawing this year?"

A tall boy in the crowd raised his hand. "Here," he said. "I'm drawing for my mother and me." He blinked his eyes nervously and ducked his head as several voices in the crowd said thin#s like "Good fellow, lack." and "Glad to see your mother's got a man to do it."

"Well," Mr. Summers said, "guess that's everyone. Old Man Warner make it?"

"Here," a voice said. and Mr. Summers nodded.

A sudden hush fell on the crowd as Mr. Summers cleared his throat and looked at the list. "All ready?" he called. "Now, I'll read the names--heads of families first--and the men come up and take a paper out of the box. Keep the paper folded in your hand without looking at it until everyone has had a turn. Everything clear?"

The people had done it so many times that they only half listened to the directions: most of them were quiet. wetting their lips. not looking around. Then Mr. Summers raised one hand high and said, "Adams." A man disengaged himself from the crowd and came forward. "Hi. Steve." Mr. Summers said. and Mr. Adams said. "Hi. Joe." They grinned at one another humorlessly and nervously. Then Mr. Adams reached into the black box and took out a folded paper. He held it firmly by one corner as he turned and went hastily back to his place in the crowd. where he stood a little apart from his family. not looking down at his hand.

"Allen." Mr. Summers said. "Anderson.... Bentham."

"Seems like there's no time at all between lotteries any more." Mrs. Delacroix said to Mrs. Graves in the back row.

"Seems like we got through with the last one only last week."

"Time sure goes fast.-- Mrs. Graves said.

"Clark.... Delacroix"

"There goes my old man." Mrs. Delacroix said. She held her breath while her husband went forward.

"Dunbar," Mr. Summers said, and Mrs. Dunbar went steadily to the box while one of the women said. "Go on. Janey," and another said, "There she goes."

"We're next." Mrs. Graves said. She watched while Mr. Graves came around from the side of the box, greeted Mr. Summers gravely and selected a slip of paper from the box. By now, all through the crowd there were men holding the small folded papers in their large hand. turning them over and over nervously Mrs. Dunbar and her two sons stood together, Mrs. Dunbar holding the slip of paper.

"Harburt.... Hutchinson."

"Get up there, Bill," Mrs. Hutchinson said. and the people near her laughed.

"Jones."

"They do say," Mr. Adams said to Old Man Warner, who stood next to him, "that over in the north village they're talking of giving up the lottery."

Old Man Warner snorted. "Pack of crazy fools," he said. "Listening to the young folks, nothing's good enough for them. Next thing you know, they'll be wanting to go back to living in caves, nobody work any more, live hat way for a while. Used to be a saying about 'Lottery in June, corn be heavy soon.' First thing you know, we'd all be eating stewed chickweed and acorns. There's always been a lottery," he added petulantly. "Bad enough to see young Joe Summers up there joking with everybody."

"Some places have already quit lotteries." Mrs. Adams said.

"Nothing but trouble in that," Old Man Warner said stoutly. "Pack of young fools."

"Martin." And Bobby Martin watched his father go forward. "Overdyke.... Percy."

"I wish they'd hurry," Mrs. Dunbar said to her older son. "I wish they'd hurry."

"They're almost through," her son said.

"You get ready to run tell Dad," Mrs. Dunbar said.

Mr. Summers called his own name and then stepped forward precisely and selected a slip from the box. Then he called, "Warner."

"Seventy-seventh year I been in the lottery," Old Man Warner said as he went through the crowd. "Seventy-seventh time."

"Watson" The tall boy came awkwardly through the crowd. Someone said, "Don't be nervous, Jack," and Mr. Summers said, "Take your time, son."

"Zanini."

After that, there was a long pause, a breathless pause, until Mr. Summers. holding his slip of paper in the air, said, "All right, fellows." For a minute, no one moved, and then all the slips of paper were opened. Suddenly, all the women began to speak at once, saving. "Who is it?," "Who's got it?," "Is it the Dunbars?," "Is it the Watsons?" Then the voices began to say, "It's Hutchinson. It's Bill," "Bill Hutchinson's got it."

"Go tell your father," Mrs. Dunbar said to her older son.

People began to look around to see the Hutchinsons. Bill Hutchinson was standing quiet, staring down at the paper in his hand. Suddenly. Tessie Hutchinson shouted to Mr. Summers. "You didn't give him time enough to take any paper he wanted. I saw you. It wasn't fair!"

"Be a good sport, Tessie." Mrs. Delacroix called, and Mrs. Graves said, "All of us took the same chance."

"Shut up, Tessie," Bill Hutchinson said.

"Well, everyone," Mr. Summers said, "that was done pretty fast, and now we've got to be hurrying a little more to get done in time." He consulted his next list. "Bill," he said, "you draw for the Hutchinson family. You got any other households in the Hutchinsons?"

"There's Don and Eva," Mrs. Hutchinson yelled. "Make them take their chance!"

"Daughters draw with their husbands' families, Tessie," Mr. Summers said gently. "You know that as well as anyone else."

"It wasn't fair," Tessie said.

"I guess not, Joe." Bill Hutchinson said regretfully. "My daughter draws with her husband's family; that's only fair. And I've got no other family except the kids."

"Then, as far as drawing for families is concerned, it's you," Mr. Summers said in explanation, "and as far as drawing for households is concerned, that's you, too. Right?"

"Right," Bill Hutchinson said.

"How many kids, Bill?" Mr. Summers asked formally.

"Three," Bill Hutchinson said.

"There's Bill, Jr., and Nancy, and little Dave. And Tessie and me."

"All right, then," Mr. Summers said. "Harry, you got their tickets back?"

Mr. Graves nodded and held up the slips of paper. "Put them in the box, then," Mr. Summers directed. "Take Bill's and put it in."

"I think we ought to start over," Mrs. Hutchinson said, as quietly as she could. "I tell you it wasn't fair. You didn't give him time enough to choose. Everybody saw that."

Mr. Graves had selected the five slips and put them in the box. and he dropped all the papers but those onto the ground. where the breeze caught them and lifted them off.

"Listen, everybody," Mrs. Hutchinson was saying to the people around her.

"Ready, Bill?" Mr. Summers asked. and Bill Hutchinson, with one quick glance around at his wife and children. nodded.

"Remember," Mr. Summers said. "take the slips and keep them folded until each person has taken one. Harry, you help little Dave." Mr. Graves took the hand of the little boy, who came willingly with him up to the box. "Take a paper out of the box, Davy." Mr. Summers said. Davy put his hand into the box and laughed. "Take just one paper." Mr. Summers said. "Harry, you hold it for him." Mr. Graves took the child's hand and removed the folded paper from the tight fist and held it while little Dave stood next to him and looked up at him wonderingly.

"Nancy next," Mr. Summers said. Nancy was twelve, and her school friends breathed heavily as she went forward switching her skirt, and took a slip daintily from the box "Bill, Jr.," Mr. Summers said, and Billy, his face red and his feet overlarge, near knocked the box over as he got a paper out. "Tessie," Mr. Summers said. She hesitated for a minute, looking around defiantly. and then set her lips and went up to the box. She snatched a paper out and held it behind her.

"Bill," Mr. Summers said, and Bill Hutchinson reached into the box and felt around, bringing his hand out at last with the slip of paper in it.

The crowd was quiet. A girl whispered, "I hope it's not Nancy," and the sound of the whisper reached the edges of the crowd.

"It's not the way it used to be." Old Man Warner said clearly. "People ain't the way they used to be."

"All right," Mr. Summers said. "Open the papers. Harry, you open little Dave's."

Mr. Graves opened the slip of paper and there was a general sigh through the crowd as he held it up and everyone could see that it was blank. Nancy and Bill. Jr.. opened theirs at the same time. and both beamed and laughed. turning around to the crowd and holding their slips of paper above their heads.

"Tessie," Mr. Summers said. There was a pause, and then Mr. Summers looked at Bill Hutchinson, and Bill unfolded his paper and showed it. It was blank.

Grade 7 Historical Fiction Writing Choice Board - Visit the online option for an interactive board with tutorials. Use the anchor charts to help you write your own historical fiction story.

Setting

Characters

Plot

PATROL

Writing Historical Fiction

Dialogue

Theme

Research

Revision

Edit
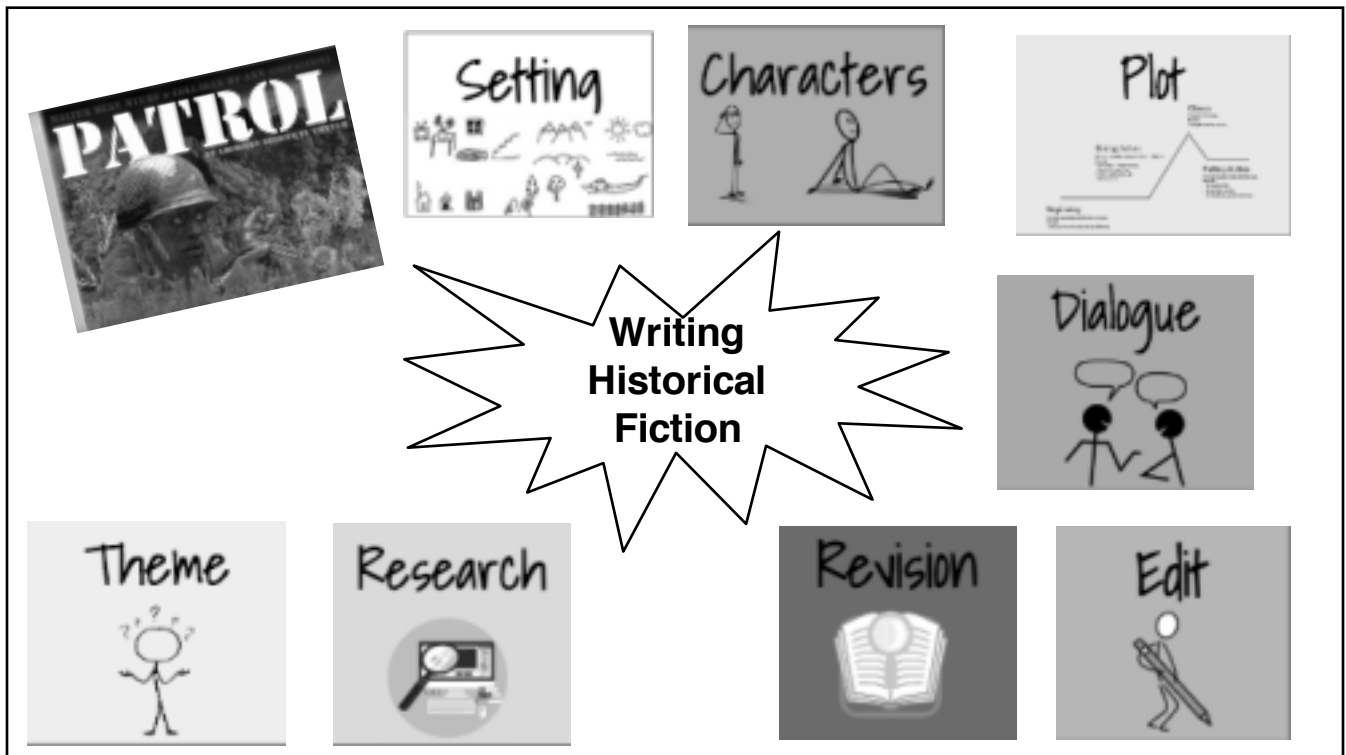
What is Historical fiction?

Historical fiction is an imagined story set in the real world that portrays life as it might have been lived in the past. It tells a compelling story first and relates historical information second.

PATROL

SUMMER of a GERMAN SOLDIER

ROCK AND THE RIVER
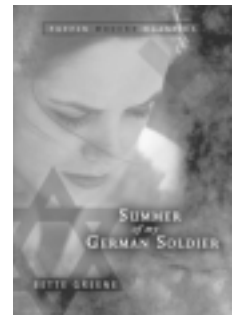
- Based on real people from the past, but includes people from your imagination as well
- Portrays life as it might have been lived in the past
- Focuses on the problems and issues of the past
- Has narrative structure with characters, plot, rising action, climax, falling action, resolution, and setting.

Setting is the time and place of your story. (location in the world, city, country, inside, outside) What century, what year, what season

Try to transport your readers into the past in the first paragraph or two.

Patrol by Walter Dean Myers

The land of my enemy
has wide valleys,
mountains that stretch
along the far horizon,
rushing brown rivers,
and thick green forests.

My squad of nine men
are in the forest.

Above me, birds twitter nervously in the treetops.
Insects and small animals scurry through the underbrush,
trying to avoid the crush of my combat boots.

Your setting brings the past to life

What kind of person is the main character?

The character could have... but instead s/he... This shows that...

What's new for the character?

What's the character's backstory?

What do moments of trouble reveal about the person?

Characters

Who is telling the story? What is the narrator's point of view?

My squad of nine men are in the forest.

Above me, birds twitter nervously in the treetops.
Insects and small animals scurry through the underbrush,
trying to avoid the crush of my combat boots.

The squad leader raises his hand. We stop.
The sound of my breath is soft in the morning air.

Expect characters to be complicated and show more than one trait.
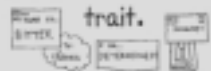
They change and grow in response to their experiences.

Look at a character's less likeable sides.

They consider how the past is not dead, but is always with us.

Reflect on the characters and the story again, after you read the ending.

Plot

What's going on?

- What is the historical conflict?
- What role does the protagonist play in it?
- What's happening that's new?
- What's the backstory of the conflict?

Story Mountain

- **Climax** — This is when the problem reaches a high point!
- **Rising Action** — This includes the events leading up to the main problem or conflict.
- **Falling Action** — This is when the characters work to solve the problem or conflict.
- **Background** — This includes the introduction of characters and setting.
- **Resolution** — This is how things end up in the story.

Somewhere in the forest, hidden in the shadows, is the enemy.
He knows I have come to kill him.
He waits for me.

Shots! A firefight!
I dive to the ground.
My heart beats faster.
I lift my rifle and fire into the green forest.
Bullets sing and whine over my head.
I empty my clip, sending more bullets into the trees, the bushes.

We wait. We wait.
Images of those I love come to mind.

Still we wait.
Then we are startled by the sound of the planes.
We look up at them and see their shadows spreading
over the valley's edge toward us.
They pass us and do their work.
The bombs explode, rumbling like thunder
at a distance that is never distant enough.

And war.

We land.
I am glad that I am alive.

Theme

The message of the story lives on after your story ends, and often can be related to life today.

Before the end, resolve problems, teach lessons, or make changes that tie back to the big meaning.

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

Notice how Walter Dean Myers alludes to the BIG MESSAGE of his story, Patrol in this short excerpt:

We stare across the distance. I know he wants me to lift my rifle, to be the enemy. I want him to lift his rifle. I want him to turn away. In a heartbeat we have learned too much about each other.

What mistakes are we making now that people also made in history?

Dialogue

Make sure each character speaks in a way that makes sense for them. Moms sound like moms. Kids sound like kids.

Feel free to include words or speech that may be old fashioned or colloquial language of that time period.

Include only the information that characters would really say to each other

Use slang if appropriate to the time period

Excerpt from Patrol by Walter Dean Myers:

"Secure the village!" a sergeant calls.
He points towards the enemy.

Excerpt from Refugee by Alan Gratz:

"Mother," said Jonas, only one of his eyes visible through the crack in his door, "are you going to open it? It sounds as if they might break it down."

Mother's head turned to see both Jonas and me peering out of our rooms. She attempted a forced smile. "Yes, darling. I will open the door. I won't let anyone break down our door."
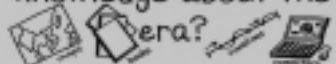
1. Edit for voice
2. Edit Word choice for historical accuracy

Your research should make your plot and characters seem real. Read your work to make sure it is accurate!

Researching for Historical Accuracy
Whatever details you include in your story, it's worth getting them right.

What nonfiction sources can I use to build background knowledge about the era?

The pickup zone is just beyond a rice paddy.
In the paddy, a farmer squats, waiting for the squad to pass.
His stick-thin legs disappear into the shallow water,
and it looks as if it is he who grows there.
He is the harvest we must understand.

A shot!
I reach for the ground and scramble for cover.
The elephant grass cuts my arms as I slide toward a low wall.
Then, there is an opening in the tall grass, and I look through.
There is the enemy!
He is looking at me!
We are surprised to see each other.
Shocked.
How young he is.

Reminder: This is about story writing, not filling the reader with facts!

Revision - Making your writing better by looking closely

Characteristics of Historical Fiction	Not Yet	Starting To	Yes
Based on real people or events from the past			
Portrays life as it might have been lived in the past			
Focuses on the problems and issues of life in the past			
Has narrative structure with character, plot, and setting			
Often uses old-fashioned language in dialogue			
Communicates important understandings of history			

Revise, using all you know about storytelling, not summarizing.

- Are there true details?
- Are there made up details?
- Does this story match the time period in which it was set?
- Have I taught my reader anything about the time period?
- Have I left my reader with a lesson?

THEY TOOK ME IN MY NIGHTGOWN.

Thinking back, the signs were there—family photos burned in the fireplace, Mother sewing her best silver and jewelry into the lining of her coat late at night, and Papa not returning from work. My younger brother, Jonas, was asking questions. I asked questions, too, but perhaps I refused to acknowledge the signs. Only later did I realize that Mother and Father intended we escape. We did not escape.

We were taken.

June 14, 1941. I had changed into my nightgown and settled in at my desk to write my cousin Joana a letter. I opened a new ivory writing tablet and a case of pens and pencils, a gift from my aunt for my fifteenth birthday.

The evening breeze floated through the open window over my desk, waltzing the curtain from side to side. I could smell the lily of the valley that Mother and I had planted two years ago. Dear Joana.

It wasn't a knocking. It was an urgent booming that made me jump in my chair. Fists pounded on our front door. No one stirred inside the house. I left my desk and peered out into the hallway. My mother stood flat against the wall facing our framed map of Lithuania, her eyes closed and her face pulled with an anxiety I had never seen. She was praying.
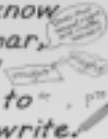
"Mother," said Jonas, only one of his eyes visible through the crack in his door, "are you going to open it? It sounds as if they might break it down."

Mother's head turned to see both Jonas and me peering out of our rooms. She attempted a forced smile. "Yes, darling. I will open the door. I won't let anyone break down our door."

Excerpt from Refugee by Alan Gratz

Edit: Making your writing better by making it clearer

Use all you know about grammar, spelling, and punctuation to edit as you write.

✓ 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:

a. Introducing the source, then giving the quotation:

According to one witness, "The car came out of nowhere, and so did the brave bystander."

b. Tucking a quote into narrative/explanation:

A witness first claimed that "the car came out of nowhere," before adding, "and so did the brave bystander."

c. Leading with a quote, then adding narration/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 expository paragraphs—for new ideas or examples.

JOSEF
BERLIN, GERMANY—1938

CRACK! BANG!

Josef Landau shot straight up in bed, his heart racing. That sound—it was like someone had kicked the front door in. Or had he dreamed it?

Josef listened, straining his ears in the dark. He wasn't used to the sounds of this new flat, the smaller one he and his family had been forced to move into. They couldn't afford their old place, not since the Nazis told Josef's father he wasn't allowed to practice law anymore because he was Jewish.

Across the room, Josef's little sister, Ruth, was still asleep. Josef tried to relax. Maybe he'd just been having a nightmare.

Something in the darkness outside his room moved with a grunt and a scuffle.

Someone was in the house!

Josef scrambled backward on his bed, his eyes wide. There was a shattering sound in the next room—*crash!* Ruth woke up and screamed. Screamed in sheer blind terror. She was only six years old.

"Mama!" Josef cried. "Papa!"

Excerpt from Refugee by Alan Gratz

The land of my enemy
has wide valleys,
mountains that stretch
along the far horizon,
rushing brown rivers,
and thick green forests.

My squad of nine men
are in the forest.

Above me, birds twitter nervously in the treetops.
Insects and small animals scurry through the underbrush,
trying to avoid the crush of my combat boots.

The squad leader raises his hand. We stop.
The sound of my breath is soft in the morning air.

Somewhere in the forest, hidden in the shadows, is the enemy.
He knows I have come to kill him.
He waits for me.

The squad leader signals, and the patrol moves out again.
The brush thickens as we head toward our target.
The fog, which rolls slowly at the edge of the forest,
is beginning to clear.
I lift my rifle and begin to rub the palm of my hand slowly
along its wooden stock.
The weather is hot, but the sweat that runs down my back feels cold.

Shots! A firefight!
I dive to the ground.
My heart beats faster.
I lift my rifle and fire into the green forest.
Bullets sing and whine over my head.
I empty my clip, sending more bullets into the trees, the bushes.

In reply, the bark flies from a tree near my head.
I think I see the enemy.
I reload and shoot again.
It is only a shadow, but I do not stop shooting.
In war, shadows are enemies, too.

Suddenly, there is silence.
We are afraid to move.
We are more afraid not to move.

I hear the sounds of the birds again.
I wonder if they speak of us from the high branches.
I wonder if what they see makes them sad.

I am so afraid.
I want the enemy to be more afraid.
I want him to tremble more than I tremble.
The radio crackles in my hand as I call for bombs.

Crouched against a tree older than my grandfather,
I imagine the enemy crouching against
a tree older than his grandfather.

We wait. We wait.
Images of those I love come to mind.

Still we wait.
Then we are startled by the sound of the planes.
We look up at them and see their shadows spreading
over the valley's edge toward us.
They pass us and do their work.
The bombs explode, rumbling like thunder
at a distance that is never distant enough.

My body shakes.
I tell myself that I will not die on this bright day.
Against the horizon, columns of blue-gray smoke rise.
Two clicks away, there are flashes of gunfire.
Two clicks is the distance of my enemy.

My chest tightens.
I wipe my sweaty palms.
I bite back my tears.

We move again.
We are always moving.
My legs ache.
My shoulders sag.
My thousand eyes look for death
in the waving bamboo fields.

A village.
It is our target.
We circle it.
We swing around, sweeping our gun sights
along the windows in the huts.
We rush in behind the hollow booming of grenades.

"Secure the village!" a sergeant calls.
He points towards the enemy.

The enemy.
A brown woman with rivers of age etched deeply into her face.
An old man, his eyes heavy with memory.
And babies. Babies.
Little enemies crying on the mud roads.
Little enemies with tears running down dusty cheeks.

But I know there are other enemies.
They are strong, and young.
I am strong, and young.

The others, they are the real enemy.
They have dogs that bark at danger.
And wooden bowls that hold a day's rice.
And grandmothers who stand sullen at their huts.
This is my enemy.

The pickup zone is just beyond a rice paddy.
In the paddy, a farmer squats, waiting for the squad to pass.
His stick-thin legs disappear into the shallow water,
and it looks as if it is he who grows there.
He is the harvest we must understand.

A shot!
I reach for the ground and scramble for cover.
The elephant grass cuts my arms as I slide toward a low wall.
Then, there is an opening in the tall grass, and I look through.
There is the enemy!
He is looking at me!
We are surprised to see each other.
Shocked.
How young he is.

We stare across the distance.
I know he wants me to lift my rifle, to be the enemy.
I want him to lift his rifle.
I want him to turn away.
In a heartbeat, we have learned too much about each other.

The putt-putt of the chopper interrupts the moment.
The enemy turns away and is swallowed by
the lush grass that is everywhere in this land.

I lift my rifle.
I aim at the distant shadow.
I am the enemy.
I lower the rifle.

My fingers clutch the webbing of the chopper.
It strains with the weight of the squad.
Below us the land becomes a peaceful patchwork
of greens and blues and browns.

This land has wide valleys, mountains that stretch
along the far horizon, rushing brown rivers,
and thick green forests.

And war.

We land.
I am glad that I am alive.

As the heat of the day passes to the heat of night . . .

. . . I write a letter to someone I love.
I wonder if my enemy is writing a letter.

I am so tired.
I am so very tired of this war.

Patrol, by Walter Dean Myers, illustrated by Ann Grifalconi. Text copyright © 2002 by Walter Dean
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Flocabulary
Hip-Hop in the Classroom

The Flocabulary Formula to Master Any Word or Term

Step	Example	Your Rhyme	
1. Choose your word that you want to remember. Define it and use it in a sentence.	Vain (adj.) too proud of oneself. *Vain people always carry a mirror in their pocket so they can check themselves out.*	Word: Definition: Sentence:	
2. Write the first line using this formula: Definition + Word	Lisa is so into herself; she is so *vain*.	_____ + _____ Definition Word	
3. List possible perfect rhymes and slant words.	Perfect rhymes for *vain*: pain insane gain disdain brain etc. vein	Slant rhymes: day take play sale came sayin' wage etc.	Perfect rhymes for your word:	Slant rhymes for your word:
4. Complete your rhyme from Step 2 with a related line.	Good example: *Lisa is so into herself; she is so vain,* *She looks in the mirror so much, it drives me insane.* Bad example: *Lisa is so into herself. You know, she is so vain, she likes rain.*	_____ + _____ Definition Word _____ Content + Rhyme	
5. Repeat! You may want to play with other rhyming setups, too. This is particularly useful for words that are hard to rhyme. This commonly happens with more complex content-area vocabulary.	*Lester was totally timid; I mean, he was so shy, if he had to speak in public, he started to cry.* *We're heliocentric; you know, the sun's at the center. Galileo knew it; plus, the dude was an inventor.*	_____ _____ Vocab Word Definition _____ _____ Context Rhyme **More Rhymes:**	

Name _____ Date _____ Class Period _____

Adjacent, Vertical, Supplementary, and Complementary Angles

- **Adjacent angles** are "side by side"; they share a common vertex and common ray.

45⁰ 15⁰
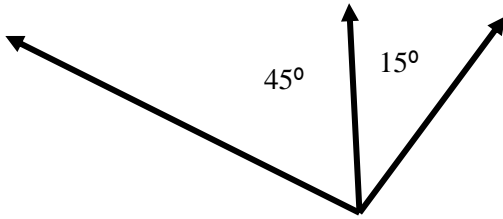
➢ These are examples of adjacent angles.

35⁰
55⁰

80⁰ 45⁰

85⁰
20⁰

130⁰ 50⁰
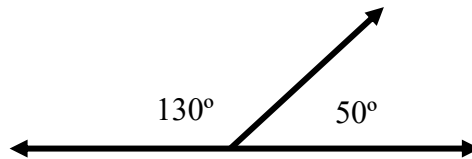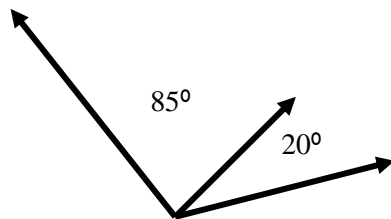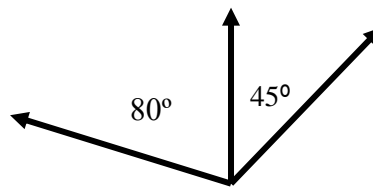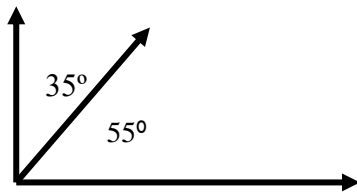
➢ These angles are NOT adjacent.

100⁰

50⁰

35⁰

35⁰

55⁰ 45⁰
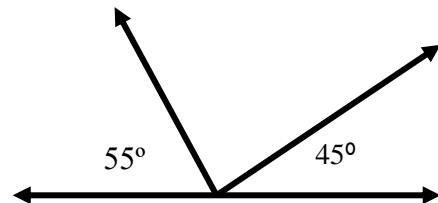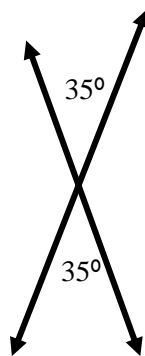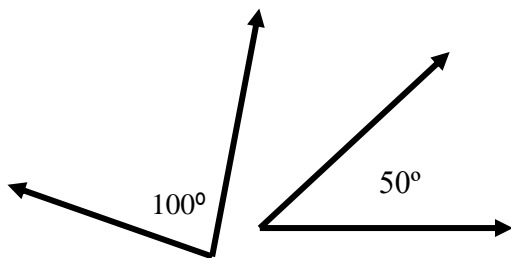
- When 2 lines intersect, they make **vertical angles**.

105⁰ 75º 75º 105⁰
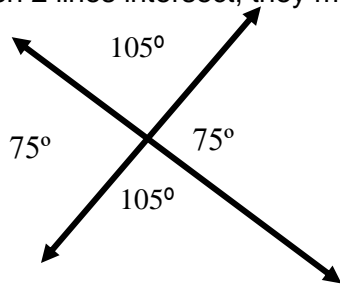
> Vertical angles are opposite one another.

105⁰ 105º 75⁰ 75º
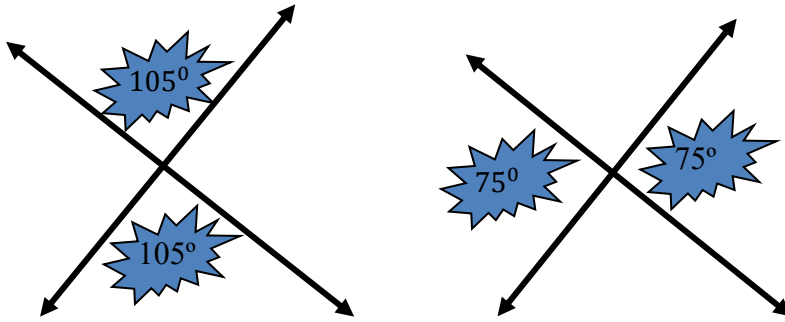
> Vertical angles are always congruent to one another (equal measures).

150⁰ 30º 30⁰ 150⁰
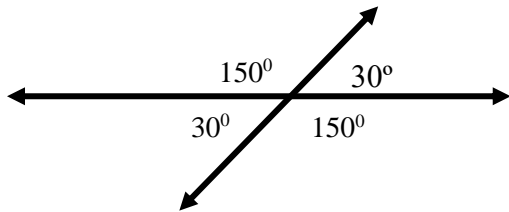
- **Supplementary angles** add up to 180⁰.

120⁰ 60⁰

40º 140º
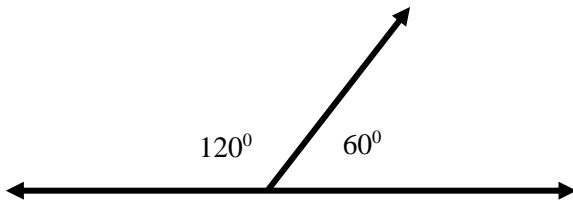
Supplementary **and** Adjacent Angles   Supplementary Angles but **not** Adjacent
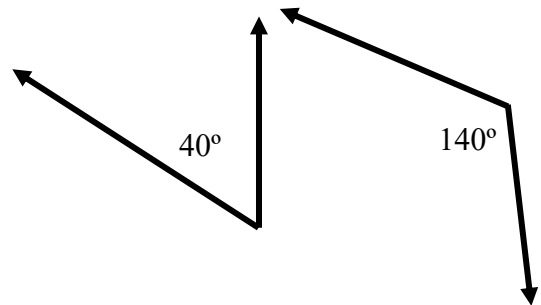
- **Complementary angles** add up to 90⁰.

30º 60º

50⁰ 40º
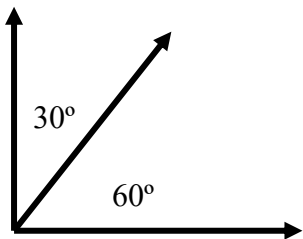
Complementary **and** Adjacent Angles   Complementary Angles but **not** Adjacent
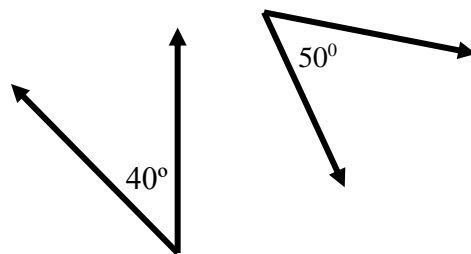
Complementary and Supplementary Angles and Algebra   Stewart

1. Use the diagram below to find the two angles. Be sure to show all of your work.
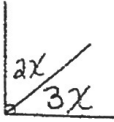
$2x$
$3x$

2. Use the diagram below to find the two angles. Be sure to show all of your work.
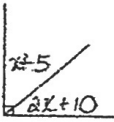
$x+5$
$2x+10$

3. Use the diagram below to find the two angles. Be sure to show all of your work.
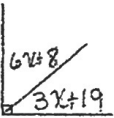
$6x+8$
$3x+19$

4. Use the diagram below to find the two angles. Be sure to show all of your work.
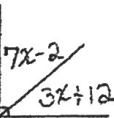
$7x-2$
$3x+12$

5. Use the diagram below to find the two angles. Be sure to show all of your work.
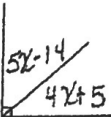
$5x-14$
$4x+5$

6. Use the diagram below to find the two angles. Be sure to show all of your work.

$6x$ \ $9x$

7. Use the diagram below to find the two angles. Be sure to show all of your work.

$2x+15$ \ $3x+10$

8. Use the diagram below to find the two angles. Be sure to show all of your work.

$3x+30$ \ $6x+15$
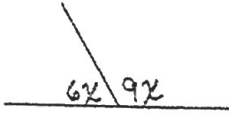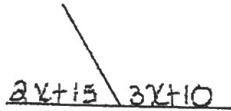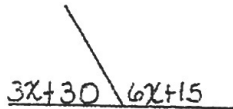
9. Use the diagram below to find the two angles. Be sure to show all of your work.

$5x-10$ \ $4x+28$
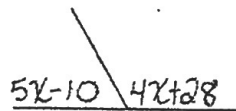
10. Use the diagram below to find the two angles. Be sure to show all of your work.

$7x-15$ \ $8x-15$
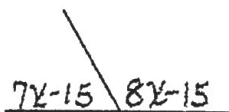
Classify angles.

Write if angles are complementary, supplementary, or adjacent. Find the value of x in each figure.

1.

120° x°

_____, x =

2.

119°
x°

_____, x =

3.

x°
55°

_____, x =

4.

40° x°

_____, x =

5.

80° x°

_____, x =

6.

98° x°

_____, x =

7.

22°
x°

_____, x =

8.

x°
59°

_____, x =

9.

x°
6°

_____, x =
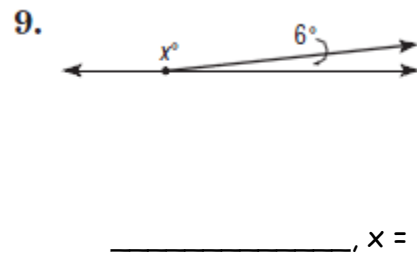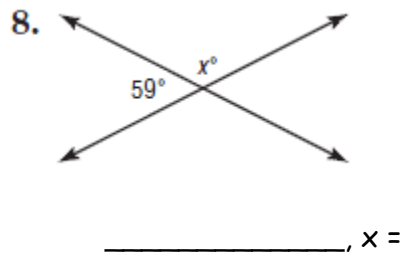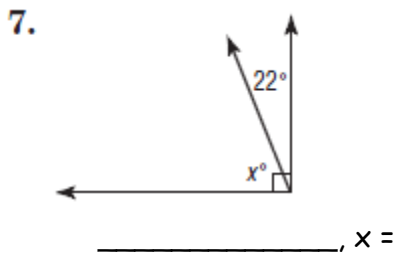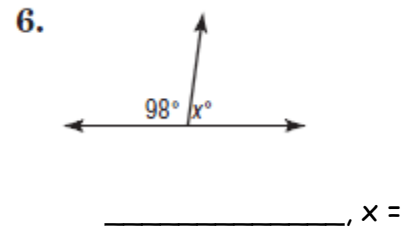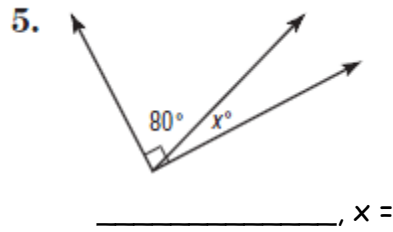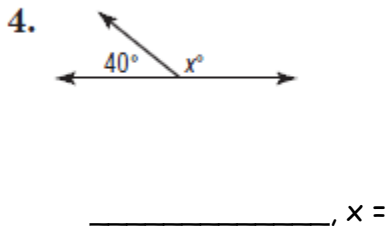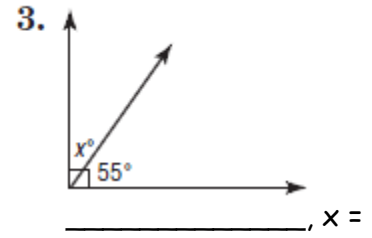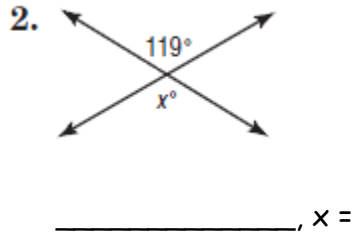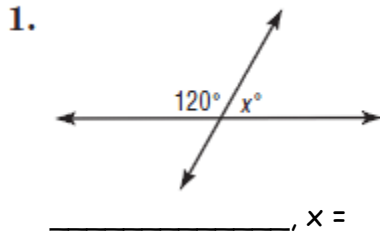
10.   Find the measure of angles 1, 2, and 3.
Explain your reasoning.

1   43°
2   3

11. Name the angles:

a° b° c° d° e°
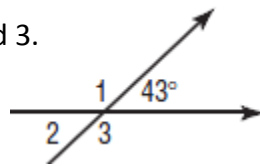
a) Vertical: _____ and _____
b) Complementary: ∠c and _____
c) Supplementary: ∠c and _____
d) All adjacent: _____
e) Find values of all angles , if angle c is 30°: _____

Find the value of x in each figure.

12.

$(x + 12)°$

$140°$

13.

$(x - 47)°$

$8°$

14.

$80°$

$(2x + 10)°$

15.

$125°$

$64°$ $x°$

16.

$88°$ $x°$

$167°$
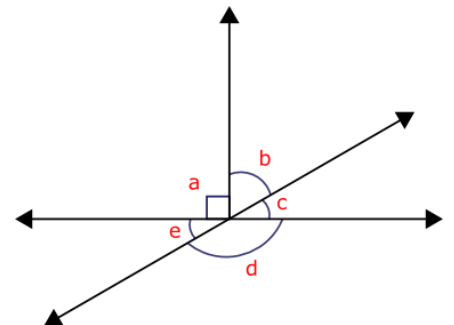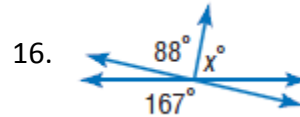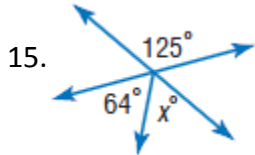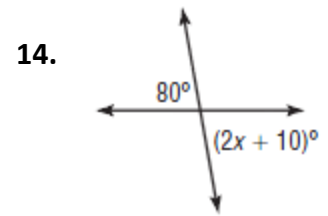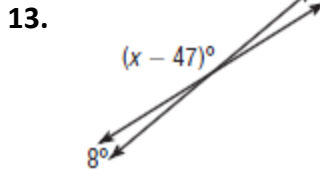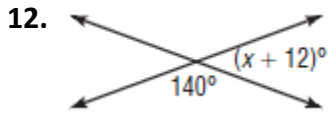
17. ALGEBRA Angles A and B are complementary. If $m\angle A = 3x - 8$ and $m\angle B = 5x + 10$, what is the measure of each angle?

18. ALGEBRA Angles Q and R are supplementary. If $m\angle Q = 4x + 9$ and $m\angle R = 8x + 3$, what is the measure of each angle?

19. The Millers open a savings account for their newborn son with $430. Find the total amount in the account after 3 years if the simple interest rate is 2.5%.

20. Find each percent of change. State whether the percent of change is *increase* or *decrease*.

original: 20 members
new: 27 members

b) old price: $45
sale price: $18

c) original: 620 pages
new: 31 pages

Find the measure of a complement of ∠1 for each of the following measures of ∠1.

  1. $m\angle 1 = 68°$

  2. $m\angle 1 = 80°$

  3. $m\angle 1 = 3°$

Find the measure of a supplement of ∠2 for each of the following measures of ∠2.

  4. $m\angle 2 = 78°$

  5. $m\angle 2 = 155°$

  6. $m\angle 2 = 1°$

Use the following figure to answer practice problems 11–13.

  7. Name two supplement angles of ∠DOE.

  8. Name a pair of complementary angles.

  9. Name two pairs of vertical angles.
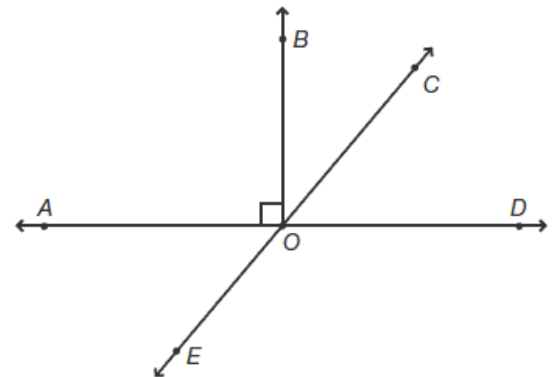
State whether the following statements are true or false.

10. Complementary angles must be acute.

11. Supplementary angles must be obtuse.

12. Two acute angles can be supplementary.

13. A pair of vertical angles can be complementary.

14. A pair of vertical angles can be supplementary.

15. Vertical angles must have the same measure.

16. Complementary angles can be adjacent.

17. Supplementary angles can be adjacent.

18. Any two right angles are supplementary.

19. Two acute angles are always complementary.

20. An acute and an obtuse angle are always supplementary.

21. The intersection of two rays creates two pairs of vertical angles and four pairs of supplementary angles.

Use the following figure to answer practice problem 21.
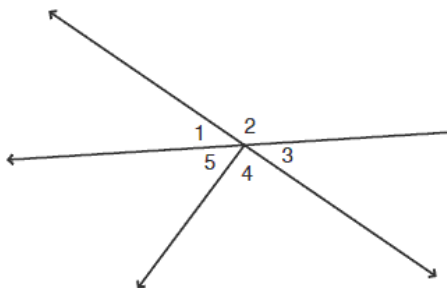
21. A common error is assuming that any pair of angles that are "across from each other" are vertical. In this figure, ∠1 and ∠3 are vertical angles because they are formed by intersecting lines. Angles 2 and 4 are not vertical angles. Name three other pairs of nonadjacent angles that are also not vertical.

22. Look at these angles.
Which two angles are complementary?
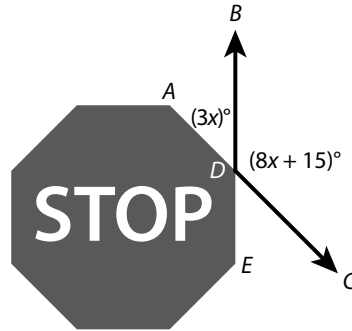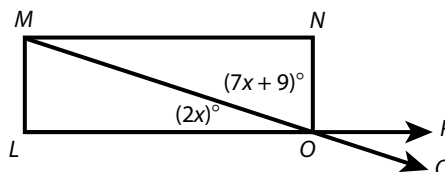
71° M   109° N   19° P   71° Q

Name: _____
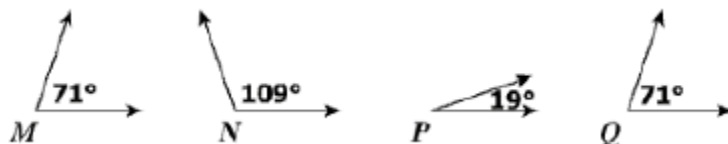
Use Supplementary and Vertical Angles

Study the example showing how to use supplementary and vertical angles to find angle measures. Then solve problems 1–8.

Example

A teacher draws a stop sign. She extends $\overline{AD}$ and $\overline{ED}$, as shown. Write an equation that you can use to find the value of x.

$\angle ADB$ and $\angle BDC$ are supplementary angles, so the sum of their measures is 180°. This means that you can use the equation $3x + (8x + 15) = 180$ to find the value of x.

1 How do you know that $\angle ADB$ and $\angle BDC$ are supplementary?

_____

2 Solve the equation $3x + (8x + 15) = 180$ to find the value of x.

Show your work.

Solution: _____

3 Use your answer to problem 2 to find the measures of $\angle ADB$ and $\angle BDC$.

Show your work.

Solution: _____

4 What is the measure of $\angle ADE$? Justify your answer.

_____

Vocabulary

supplementary angles two angles whose measures add up to 180°.

vertical angles congruent angles formed when two lines intersect.

Name: _____

Use Complementary and Vertical Angles

Study the example showing how to about complementary and vertical angles to find angle measures. Then solve problems 1–8.

> ### Example
>
> In the diagram, $\overline{LO}$ and $\overline{MO}$ of rectangle *LMNO* are extended as shown. Write an equation that you can use to find the value of *x*.
>
> Because ∠*MON* and ∠*LOM* are complementary angles, the sum of their measures is 90°. This means that you can use the equation $2x + (7x + 9) = 90$ to find the value of *x*.

M   *N*
$(7x + 9)°$
$(2x)°$
L   *O*   *P*
Q

1 How do you know that ∠*MON* and ∠*LOM* are complementary angles?

_____

2 Solve the equation $2x + (7x + 9) = 90$ to find the value of *x*.

Show your work.

Solution: _____

3 Use your answer to problem 2 to find the measures of ∠*LOM* and ∠*MON*.

The measure of ∠*LOM* = _____.

The measure of ∠*MON* = _____.

4 What is the measure of ∠*POQ*? Justify your answer.

_____

_____

> ### Vocabulary
>
> **complementary angles** two angles whose measures add up to 90°.

Name: _____

Problem Solving with Angles

Solve the problems.

1 Two angles are vertical angles. One angle is labeled 2*x*°. The other angle is labeled (*x* + 30)°. Find the value of *x*.

Think about what it means for angles to be vertical angles.

A 30

B 90

C 120

D 180

2 In the diagram, $\overline{CA}$ and $\overline{BA}$ are extended as shown.

Tell whether each statement is *True* or *False*.
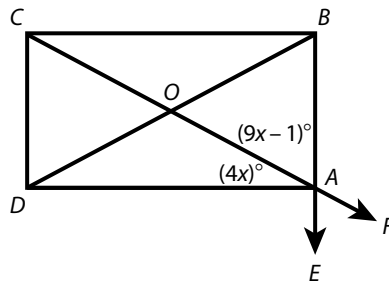
Remember that the middle letter in an angle name is the vertex of the angle.

(9x – 1)°
(4x)°

a. ∠EAF and ∠BAC are complementary. ☐ True ☐ False

b. *x* = 14 ☐ True ☐ False

c. ∠COB and ∠DOA are vertical angles. ☐ True ☐ False

d. ∠BAF and ∠FAE are supplementary. ☐ True ☐ False

e. m∠CAD = 62° ☐ True ☐ False

f. ∠EAF and ∠BAC are equal in measure. ☐ True ☐ False

3 From the following angle measures, choose a pair that is complementary and a pair that is supplementary.

Recall the definitions of supplementary and complementary.

36°   82°   102°   78°   22°   95°   12°

Complementary: _____ and _____

Supplementary: _____ and _____

Solve.

4 The hour and minute hands on the clock shown form a straight line. The location of the second hand on the clock is also shown on the diagram. Find the measures, in degrees, of angle *HOS* and angle *MOS*.

Show your work.
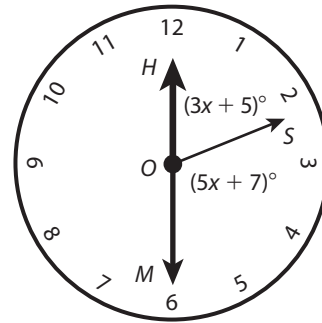
What type of angle forms when the minute and hour hands are in a straight line?

Solution: _____

_____

5 In the diagram, $\overrightarrow{PM} \perp \overleftrightarrow{AB}$.

a. Explain how ∠*MPD* and ∠*APC* are each related to ∠*DPB*.

_____

_____

_____

$\left(\frac{1}{2}x + 15\right)^{\circ}$

$(2x - 50)^{\circ}$

b. Write an expression that relates the measures of ∠*MPD* and ∠*APC* in terms of *x*.

_____

c. What is the value of *x*?

_____
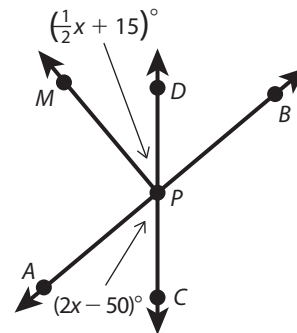
What does the given information tell you about the angles in the diagram?

Area and Circumference Notes

The **radius** of a circle is the distance from the center of a circle to any point on the circle. The radius is half of the diameter.
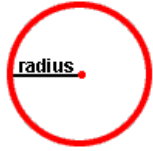
The distance across a circle through the center is called the **diameter**.

Circumference of a circle is simply the distance around the circle. The circumference is similar to perimeter of a shape such as a rectangle.

Circumference formula: $C = 2\pi r$ or πd

In this formula C stands for circumference, 2 is just the number 2, π is for purposes of this class equal to 3.14, and r is the _radius_ of the circle.

The **area** of a circle is the number of square units inside that circle.

Area Formula: $A = \pi r^2$

A is area, π is again "pi" or 3.14, r is radius and it is squared. Be careful to follow order of operations when using this formula. The formula doesn't work if we multiply pi times r first and then square that number. The squared sign applies ONLY to the radius.

π or "pi"= 3.14 for all purposes during this class.

Example 1:   **Example 2:**
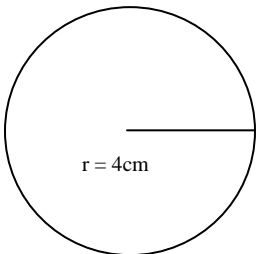
r = 4cm   d = 10 cm

$C = 2\pi 4$
$C = 2(3.14)(4)$
$C = 25.12$cm

$A = \pi 4^2$
$A = 3.14(16)$
$A = 50.24$ cm^2

$C = \pi 10$
$C = (3.14)(10)$
$C = 31.4$cm

$A = \pi 5^2$
$A = 3.14(25)$
$A = 78.5$ cm^2

Name _____ Date _____
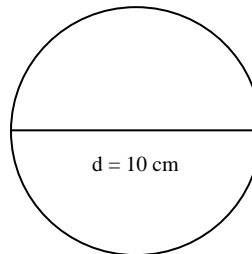
Area, Perimeter And Circumference Study Guide

Clicking on any box containing a problem will launch a video explaining how to solve that problem.

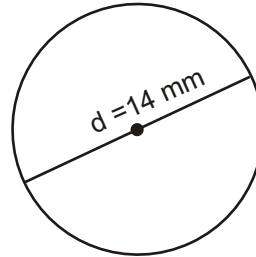**1.** Calculate the shaded portion of the figure shown. Use 3.14 for pi.

ⓐ 28.26 in.^{2}

ⓑ 21.195 in.^{2}

ⓒ 18.84 in.^{2}

ⓓ 15.752 in.^{2}

$\overline{AB}$ = 1.5 in.

$\overline{BC}$ = 1.5 in.

---

2. Find the area of the circle below. Use 3.14 for pi.

d = 14 mm

ⓐ 615.44 mm^2

ⓑ 153.86 mm^2

ⓒ 43.96 mm^2

ⓓ 21.98 mm^2

---

3. Calculate the area of the following semi-circle. Use 3.14 for pi.

ⓐ 18.84 in.^{2}

ⓑ 56.52 in.^{2}

ⓒ 64.42 in.^{2}

ⓓ 116.04 in.^{2}

$\overline{AB}$ = 6 in.

---

4. Find the area of the circle. Use 3.14 for pi.

ⓐ 12.56 units^2

ⓑ 18.84 units^2

ⓒ 25.12 units^2

ⓓ 50.24 units^2

---

5. What is the area of the shaded section of the figure below?

5 in.

ⓐ 43 in.^{2}

ⓑ 86 in.^{2}

ⓒ 122 in.^{2}

ⓓ 134 in.^{2}

---

6. Find the area of the circle below. Use 3.14 for pi.

r = 8 m

ⓐ 200.96 m^2

ⓑ 100.48 m^2

ⓒ 50.24 m^2

ⓓ 25.12 m^2

---

     www.mrmaisonet.com   *CCSS 7.G4 , 7.G.6*
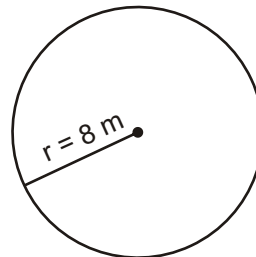
Area, Perimeter And Circumference
Assessment

1. Calculate the shaded portion of the figure shown. Use 3.14 for pi.
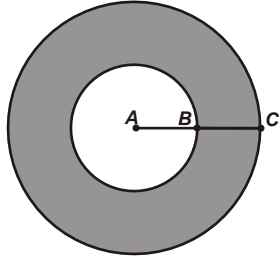
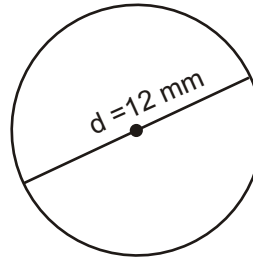   (a)   19.952 in.^{2}

    (b)   58.875 in.^{2}

    (c)   62.865 in.^{2}

    (d)   78.5 in.^{2}

$\overline{AB}$ = 2.5 in.

$\overline{BC}$ = 2.5 in.

2. Find the area of the circle below. Use 3.14 for pi.

    d =12 mm

    (a)   37.68 mm^2

    (b)   56.52 mm^2
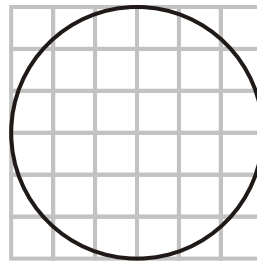
    (c)   113.04 mm^2

    (d)   452.16 mm^2

3. Calculate the area of the following semi-circle. Use 3.14 for pi.
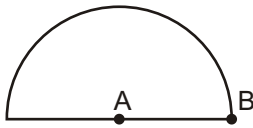
    (a)   25.12 in.^{2}

    (b)   50.24 in.^{2}

    (c)   12.56 in.^{2}

    (d)   37.68 in.^{2}

$\overline{AB}$ = 4 in.

4. Find the area of the circle. Use 3.14 for pi.
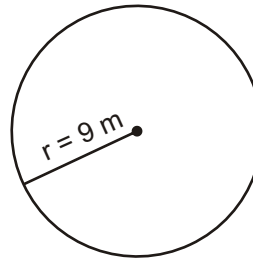
    (a)   18.84 units^2

    (b)   28.26 units^2

    (c)   37.68 units^2

    (d)   50.24 units^2

5. What is the area of the shaded section of the figure below?

    4 in.
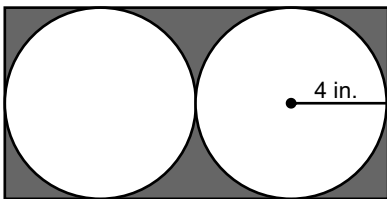
    (a)   14.24 in.^{2}

    (b)   27.52 in.^{2}

    (c)   77.76 in.^{2}

    (d)   84.24 in.^{2}

6. Find the area of the circle below. Use 3.14 for pi.

    r = 9 m

    (a)   28.26 m^2

    (b)   56.52 m^2

    (c)   113.04 m^2

    (d)   254.34 m^2

Name _____ Date _____

Classifying Triangles by Angles and Sides

Use the following terms to complete each statement.

Acute   Obtuse   Right   Equiangular   Equilateral   Scalene   Isosceles

1. _____ triangles have three congruent sides.

2. _____ triangles have no congruent sides.

3. _____ triangles have three congruent angles.

4. _____ triangles have one obtuse angle.

5. _____ triangles have one right angle.

6. _____ triangles have at least two congruent sides.
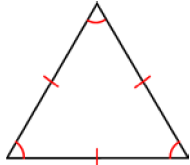
7. _____ triangles have three acute angles.

---
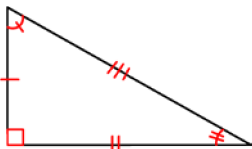
8. Classify the triangle by its angle and its side measures.

Classify by Angles:
☐ Acute
☐ Obtuse
☐ Right
☐ Equiangular

Classify by Sides:
☐ Scalene
☐ Isosceles
☐ Equilateral

Name the Triangle:

_____

---

9. Classify the triangle by its angle and its side measures.

Classify by Angles:
☐ Acute
☐ Obtuse
☐ Right
☐ Equiangular

Classify by Sides:
☐ Scalene
☐ Isosceles
☐ Equilateral

Name the Triangle:

_____

---

10. Classify the triangle by its angle and its side measures.

Classify by Angles:
☐ Acute
☐ Obtuse
☐ Right
☐ Equiangular

Classify by Sides:
☐ Scalene
☐ Isosceles
☐ Equilateral
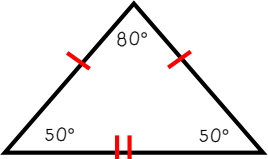
Name the Triangle:

_____

---

11. Classify the triangle by its angle and its side measures.

Classify by Angles:
☐ Acute
☐ Obtuse
☐ Right
☐ Equiangular

Classify by Sides:
☐ Scalene
☐ Isosceles
☐ Equilateral

Name the Triangle:

_____

---

12. Classify the triangle by its angle and its side measures.

Classify by Angles:
☐ Acute
☐ Obtuse
☐ Right
☐ Equiangular

Classify by Sides:
☐ Scalene
☐ Isosceles
☐ Equilateral

80°

50°   50°

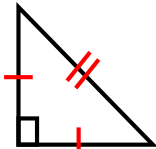Name the Triangle:

_____

---

13. Classify the triangle by its angle and its side measures.

Classify by Angles:
☐ Acute
☐ Obtuse
☐ Right
☐ Equiangular
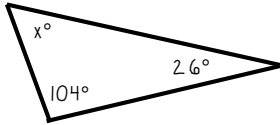
Classify by Sides:
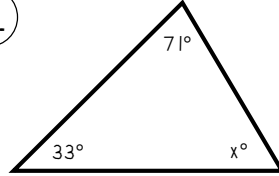☐ Scalene
☐ Isosceles
☐ Equilateral

Name the Triangle:

_____

Measuring Angles in Triangles
Find the value of x in each figure.

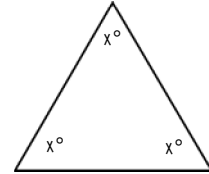1. $x°$, $104°$, $26°$

2. $71°$, $33°$, $x°$

3. $x°$, $x°$, $x°$

4. $120°$, $(x+15)°$, $(2x)°$

5. $66°$, $(3x)°$

6. $(x+14)°$, $(x-12)°$, $54°$

7. $42°$, $x°$, $57°$

8. $124°$, $(2x-2)°$, $(x+18)°$

9. $119°$, $(3x+7)°$, $76°$

10. $28°$, $(x+5)°$, $(2x-9)°$

11. $(5x+12)°$, $50°$, $(2x+1)°$

12. $60°$, $(8x)°$, $(3x+15)°$
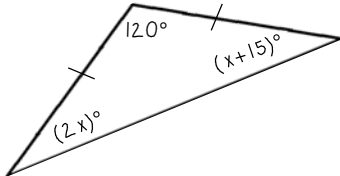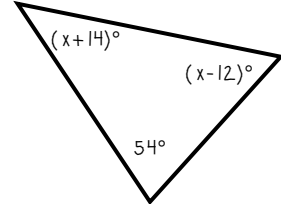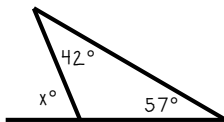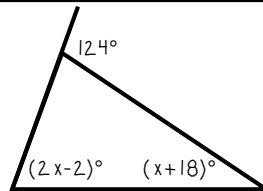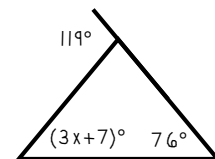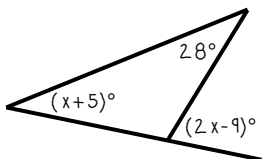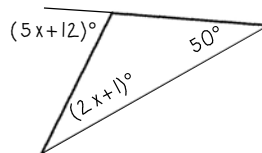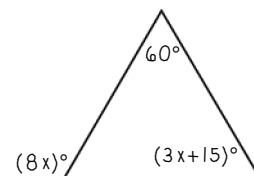
7.G Eight Circles

Task

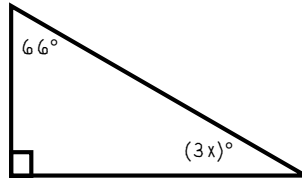The figure below is composed of eight circles, seven small circles and one large circle containing them all. Neighboring circles only share one point, and two regions between the smaller circles have been shaded. Each small circle has a radius of 5 cm.
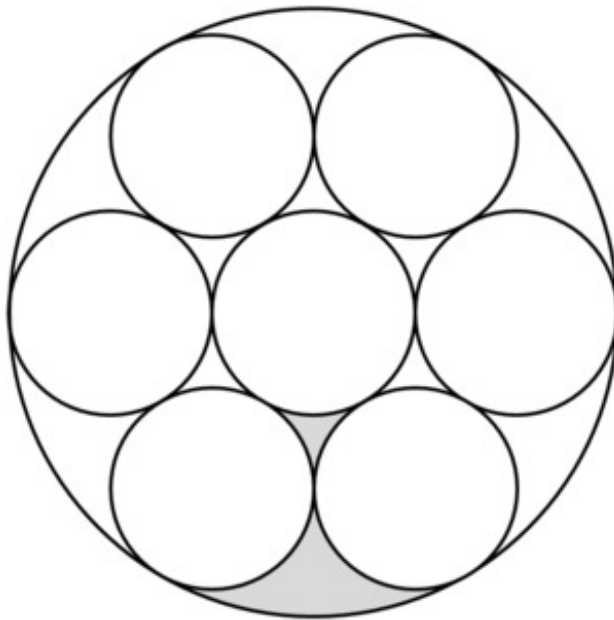
Calculate:

a. The area of the large circle.

b. The area of the shaded part of the figure.

7.G The Circumference of a Circle and the Area of the Region it Encloses

Task

a. What is the definition of a circle with center A and radius r?

b. A circle has center A and radius AB. Is point A on the circle? Is point B on the circle? Explain.
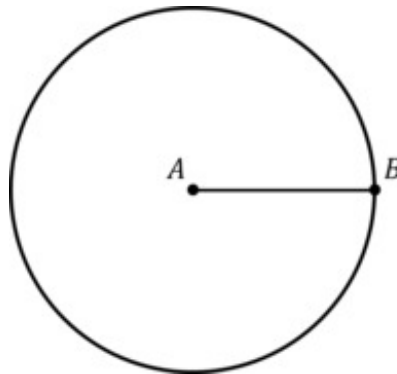
c. Imagine that a circle with center A is drawn on 1/4 inch grid paper as shown below. What is the radius of the circle?
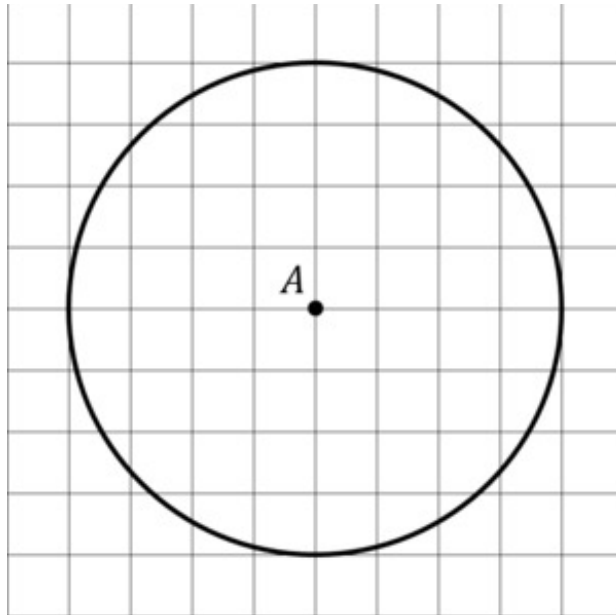
d. Use the grid to estimate the circumference of the circle.

e. Use the grid to estimate the area of the region enclosed by the circle.

f. What are you measuring when you find the circumference of a circle? What are you measuring when you find the area of a circle?

KICKING MACHINE

DESIGN SQUAD™
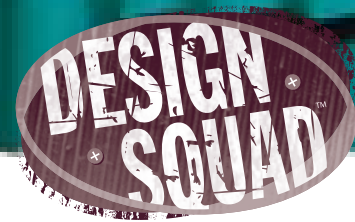
YOUR CHALLENGE

Build a machine that kicks a Ping-Pong ball into a cup lying on its side 12 inches away. Use either (1) a pendulum, (2) a rubber band, or (3) a combination of the two to do this.

MATERIALS*

- Balls (Ping-Pong and golf)
- Corrugated cardboard
- Paper clips
- Paper cups
- Popsicle sticks
- Rubber bands
- Ruler
- Scissors
- String
- Tape (masking or duct)
- Thin metal wire (optional)
- Wooden skewers

* For information on where to get these materials, see page 6 or visit pbskidsgo.org/designsquad/engineers.

BRAINSTORM AND DESIGN

Before you begin designing your machine, brainstorm answers to the following questions. Record and sketch your ideas in your design notebook.
- Will my machine use a pendulum or rubber band (or a combination) to send a ball into the cup?
- How will I stop the machine from launching the ball before I'm ready to release it?
- How will the machine be triggered when I'm ready to launch the ball?
- How will I make sure the pendulum or rubber band launches the ball straight enough and with the right amount of force so it goes into the cup?

Think about how to create different release points for the pendulum or rubber band so you have more control over a launched ball. Also consider how to determine the right amount of energy to store up before making your shot.
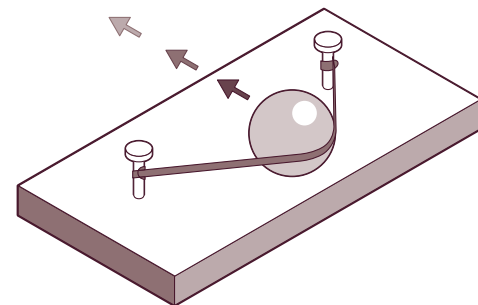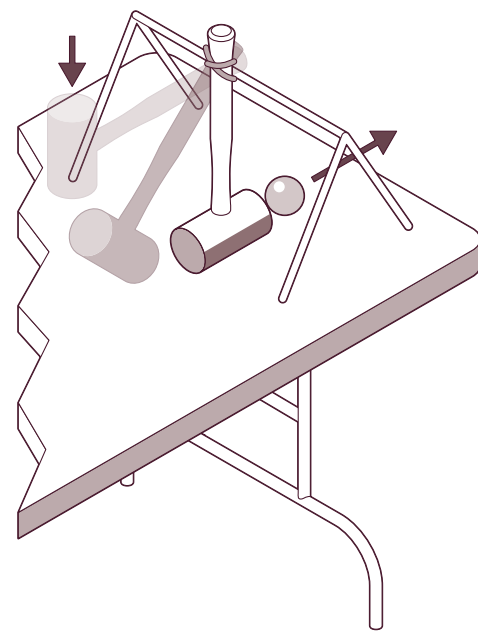
BUILD, TEST, AND REDESIGN

When you lift a pendulum or stretch a rubber band, you increase its potential energy. **Potential energy** is energy that is stored. When you release the pendulum or rubber band, its potential energy is turned into **kinetic energy**, the energy of motion. Many machines have this in common—they turn potential energy (e.g., fuel, electricity, muscle power, springs, or weights) into kinetic energy that can be used to do a task (in this case, launch a ball).

Once you've built your machine, test it. Lay a cup on its side 12 inches away and see if you can get the ball in. When we made our machine, we had to debug some problems. For example, the ball bumped into parts of our machine and went in unexpected directions, and the stretched rubber band bent our frame. It was also hard to get the pendulum and rubber band to stay pulled back. If things like this happen to you, figure out a way to fix the problem so that your machine works every time.

When you lift a pendulum or stretch a rubber band, you increase its potential energy.

KICKING MACHINE

TAKE IT TO THE NEXT LEVEL

- Move the cup so it's 24 inches from your kicking machine.
- Build a ramp and see if you can shoot the ball up and over the ramp.
- Build a machine that can launch two balls at once or that can launch balls at different speeds.

INSIDE THE ENGINEERING

SWEET DELIVERY

Building machines that make tasty—and sometimes far-out—ice cream flavors is just the kind of challenge Pete Gosselin loves. He's head engineer for Ben and Jerry's® ice cream. Pete's the guy who designs the machines that make different flavors and mix the right amounts of candy, filling, or swirl into each container. And you thought getting a ball into a cup was a challenge! Some days, it's, "We want every container to have half a pint of cherry ice cream with cherries and fudge flakes and half a pint of chocolate ice cream with fudge brownies. Now on the brownie side, make sure there are at least three but no more than four brownie bites. Oh and by the way, these babies need to roll off the production line at 200 pints a minute." To make some flavors, Pete tinkers with the factory's existing machines. For others, he has to design special machines. His biggest challenge: to design a machine that makes a flavor with a core of fudge and caramel wedged between chocolate and caramel ice cream. The way Pete sees it, "The world is full of problems and possibilities. And technology has a huge influence on making our lives better, whether the challenge is addressing global warming or making delicious food."

Ben and Jerry's is a registered trademark of Ben & Jerry's Homemade Holdings, Inc.

TAKE IT ONLINE

Want to make life easier? See how simple machines bring mechanical advantage to the rescue! Download *Not So Simple Machines* from Intel's *Design and Discovery* hands-on engineering program.

↑ intel.com/education/designanddiscovery

Photo: Mika Tomczak

The *Design Squad* cast made a kicking machine for a professional soccer player. This soccer-ball launcher uses electric drills to spin wheelbarrow wheels to send soccer balls flying.

Watch *Design Squad* on PBS (check local listings). Download more challenges at **pbskidsgo.org/designsquad.**

PBS

Giant oak trees grow from tiny acorns, so where do all of their wood, bark, and leaves come from?

If a small child asked you that question, what would you say?

To help prepare your response, do a little research:

Photosynthesis
Watch this video: https://mass.pbslearningmedia.org/resource/2bdaf922-572b-4f5c-a801-1eb2fb31b101/photosynthesis-unctv-science/

Watch the BrainPop video on photosynthesis:
Brainpop.com, Username: lowell123, Password: brainpop123
Type photosynthesis in the search window to find the right episode, and then do the challenge.

Cellular Respiration
Watch this video: https://mass.pbslearningmedia.org/resource/668b15d0-cceb-4655-86e7-7c5eabc0c53c/cellular-respiration/

Watch the BrainPop video on cellular respiration:
Brainpop.com, Username: lowell123, Password: brainpop123
Type cellular respiration in the search window to find the right episode, and then do the challenge.

Complete the following worksheet. That will also give you some clues to answer the question.

Finally, prepare your answer. Where do the energy and materials come from to turn an acorn into a tree?

_____
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Producers Experiment

Purpose: To determine what plants need to produce food.

Experimental design

- Students planted 500 grams (g) of bean seeds in each of six planting containers filled with clean, dry sand. They added 1 gram of dry fertilizer to the sand in each planter.

- Students placed the six planters in six identical environment chambers where water, light, and air could be controlled. Air gases include oxygen (O_2), carbon dioxide (CO_2), and nitrogen (N_2).

- After 3 weeks, students collected, dried, and weighed the seeds or plants. The chart below shows the conditions and results of the experiment.

	CONDITIONS					DATA		
	Water	**Light**	**O_2**	**CO_2**	**N_2**	**Starting mass**	**Ending mass**	**Mass change**
Environment A	Yes	Yes	Yes	Yes	Yes	500 g	551 g	
Environment B	Yes	Yes	Yes	Yes	No	500 g	552 g	
Environment C	Yes	Yes	Yes	No	Yes	500 g	500 g	
Environment D	Yes	Yes	No	Yes	Yes	500 g	549 g	
Environment E	Yes	No	Yes	Yes	Yes	500 g	500 g	
Environment F	No	Yes	Yes	Yes	Yes	500 g	500 g	

Results: Describe the effect of the five environmental factors (water, light, etc.) on plant growth.

Conclusions: What did you learn from the experiment about what plants need to produce food?

Grade 7 Social Studies

GREEK STRUCTURES

Greek architecture has been a very specific and influential type of design. The Greeks were famous for their temples and open-air theaters. Many of the ruins of these buildings can still be found today throughout Greece. The amazing part of Greek architecture and design is that the structures appear to have followed a common plan or design. This means that all builders used similar templates or footprints when building such structures as the temples.

The Parthenon in Athens, Greece. Original image found <u>here</u>.

The construction of homes by the Greek used walls of sun dried clay bricks or wooden framework then filled with straw or seesawed covered with clay or plaster. The foundations of the homes were stone. Roofs were more than likely made of thatch (straw, reeds, palm leaves or similar material). Some roofs were made of stone and plastered. Below is a model of what the home may have looked like.

Original image found here.

Public buildings, such as temples, were built on a much grander scale. These buildings used a system known as column and lintel, or post and lintel. This was a system of upright columns or posts supporting a horizontal beam (lintel). This system formed the basics for doors, windows, ceilings and roofs.
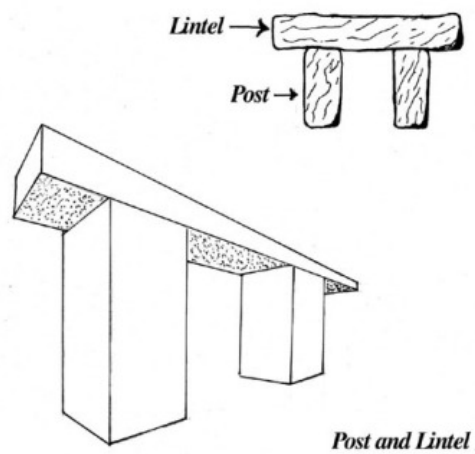
Original image found here.

Original structures that used this system were built of wood, and later they became made of stone. One incredible aspect of the column design was the purposeful planning of the perspective or viewpoint of the visitors, creating a sort of "optical illusion". The most famous for this affect is the Acropolis in Athens, Greece. There are two thoughts as to why this exists; strength and appearance.

- Strength: It is believed that the architects understood the need for stronger supports near the base of the column and therefore increased the size of the column near the bottom, giving it a larger "bulge".
- Appearance: It is also thought that the Greeks builders determined that the columns would look more grand if they were constructed to be slightly narrowed at the column top compared to the bottom. This created an effect of taller, grander design "implied by the Gods".

Column narrowing. Original image found here.

Column narrowing. Original image found <u>here</u>.

You can learn more about Greek structures and architecture by exploring this website from The British Museum. They have an amazing collection of artifacts from ancient Greece. Click on the links below:
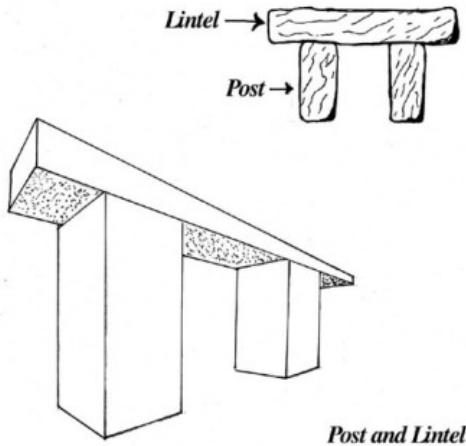
Story of the Acropolis: http://www.ancientgreece.co.uk/acropolis/story/sto_set.html

Explore the Acropolis: http://www.ancientgreece.co.uk/acropolis/explore/exp_set.html

Build a temple challenge: http://www.ancientgreece.co.uk/acropolis/challenge/cha_set.html

STEM CHALLENGE
EXPLORE THE POST AND LINTEL SYSTEM

The ancient Greeks (and many other cultures still) used the post and lintel system because when you put a top (lintel) on several columns (posts), it can bear much more weight than any of the columns could individually… even if you added them up.

The challenge: Test the strength of a building created using the post and lintel system. The posts will be paper cups and the lintels will be baking trays or cookie sheets. The weight will be provided by books. Determine the weight of your books by first weighing yourself on a scale, then weighing yourself holding books. The difference is the weight of the books.

Supplies: 18 paper cups and 2 cookie sheets

Build your own building using the post and lintel system. Make it as strong as possible! To test the strength of your building, place books on top of the lintel (cookie sheet). What design holds the most weight?

What is the second cookie sheet for? See if you can create a two-story building! How much weight would that hold?

Take a picture of your work and send it to your teacher!

ESL at Home 6-8 Weeks 9-10
Use notebook paper to complete these activities. Do one each day!

Monday	Tuesday	Wednesday	Thursday	Friday
Choose a TV Show or Movie and write a review for it! Include a summary and if you would recommend it to someone. First, ___. Next, ___. Last, __. You should/ should not watch this because ___. Another reason ___.	Use things in your home to create a kind of store (clothing, furniture, etc.). Write what you will sell and what it will cost! "Sell" items to your family and add their totals! **Example:** Red t-shirt: $10 Jeans: $17.99 Gold necklace: $4.50	Create a cooking show! Choose something to make with your family! Explain the steps of how to make the dish while you are cooking together!	Go on a walk outside. What are some **natural resources** that you see? What are some **physical features** of your area? Sketch and label. **Natural resources**: water, plants, sunlight. **Physical Features**: Mountain, hill, river.	Imagine you were an animal (**Example**: horse, cow, pig, chicken) that lived on a farm where all the animals could talk. Write and draw about your adventure with your animal friends.
Monday	Tuesday	Wednesday	Thursday	Friday
Find items around your house and create an instrument. Come up with a song and write lyrics to it. Make sure you use **imagery**!	Pick a character from a TV show, movie, or book. Write and describe the **character traits** of that character. **Example:** Batman is wearing black. He is kind because he saves others.	Read a story or chapter aloud to someone, but don't read the end (or what happens next). Have them predict what will happen. Then read it to them and see if they were correct!	Interview your parents or grandparents about their life when they were your age. Write about how your life is similar and different to theirs!	List four things in your home that produce **light energy**. List four things in your home that produce **heat energy**. List four things in your home that **reflect** light.