

History

Name: _____ Class: _____

Tiny Plastic, Big Problem

Scientists find that tiny pieces of plastic travel great distances, threatening the ocean ecosystem

By Alison Pearce Stevens
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When plastic was invented at the turn of the 20th century, it was praised as a miraculous new material that could create countless products. Few could have predicted the impact that plastic would have on our world over the course of a century. As you read, take notes on the problems that plastic pollution presents and possible solutions mentioned in the text.

- [1] Plastic bottles lying in the gutter. Grocery bags tangled in branches. Food wrappers scuttling across the ground on a windy day. Although such examples of litter easily come to mind, they only hint at the serious and growing problem of plastic pollution — a problem mostly hidden from view.

The problem with plastics is they do not easily degrade. They may break down, but only into smaller pieces. The smaller those pieces get, the more places they can go.

Many pieces wind up at sea. Tiny bits of plastic float throughout the world's oceans. They wash up on remote¹ islands. They collect in sea ice thousands of kilometers² from the nearest city. They even meld with rock, creating a whole new material. Some scientists have proposed calling it plastiglomerate (pla-stih-GLOM-er-ut).



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Exactly how much plastic is out there remains a mystery. Scientists are hard at work trying to find out. So far, though, experts haven't found as much plastic floating in the oceans as they expected. All that missing plastic is worrisome, because the smaller a plastic bit becomes, the more likely it will make its way into a living thing, whether a tiny plankton or an enormous whale. And that may spell some real trouble.

Into the soup

- [5] Plastics are used to make countless everyday products — from bottles to auto bumpers, from homework folders to flowerpots. In 2012, 288 million metric tons (317.5 million short tons) of plastic were produced worldwide. Since then, that amount has only grown.

1. **Remote** (*adjective*) far away from the main population; distant or isolated
2. One kilometer equals about 0.6 miles.

Just how much of that plastic winds up in the oceans remains unknown: Scientists estimate about 10 percent does. And one recent study suggests as much as 8 million metric tons (8.8 million short tons) of plastic wound up in the ocean in 2010 alone. How much plastic is that? “Five plastic bags filled with plastic for every foot of coastline in the world,” says Jenna Jambeck. She’s the researcher from the University of Georgia, in Athens, who led the new study. It was published February 13 in *Science*.

Of those millions of tons, as much as 80 percent had been used on land. So how did it get into the water? Storms washed some plastic litter into streams and rivers. These waterways then carried much of the trash downstream to the sea.

The other 20 percent of plastic ocean trash enters the water directly. This debris includes fishing lines, nets and other items lost at sea, dumped overboard or abandoned when they become damaged or are no longer needed.

Once in the water, not all plastics behave the same way. The most common plastic — polyethylene terephthalate (PAHL-ee-ETH-ill-een TEHR-eh-THAAL-ate), or PET — is used to make water and soft-drink bottles. Unless filled with air, these bottles sink. This makes PET pollution tough to track. That’s especially true if the bottles have drifted to the ocean depths. Most other types of plastic, however, bob along the surface. It’s these types — used in milk jugs, detergent bottles and Styrofoam — that make up the abundance of floating plastic trash.

- [10] Abundant, indeed: Evidence of plastic pollution abounds across the world’s oceans. Carried by circular currents called gyres (JI-erz), discarded pieces of plastic can travel thousands of kilometers. In some areas, they amass in huge quantities. Reports on the largest of these — the “Pacific Garbage Patch” — are easy to find online. Some sites report it to be twice the size of Texas. But defining the actual area is a difficult task. That’s because the garbage patch is actually quite patchy. It shifts around. And most of the plastic in that area is so tiny that it’s hard to see.

Millions of tons... gone missing

Recently, a group of scientists from Spain set out to tally just how much plastic floats in the oceans. To do so, the experts traveled the world’s oceans for six months. At 141 locations, they dropped a net into the water, dragging it alongside their boat. The net was made of very fine mesh. The openings were only 200 micrometers (0.0079 inch) across. This allowed the team to collect very small bits of debris.³ The trash included particles called *microplastic*.⁴

The team picked out the plastic pieces and weighed the total found at each site. Then they sorted the pieces into groups based on size. They also estimated how much plastic might have moved deeper into the water — too deep for the net to reach — due to wind churning up the surface.

What the scientists found came as a complete surprise. “Most of the plastic is lost,” says Andrés Cózar. This oceanographer⁵ at the Universidad de Cádiz in Puerto Real, Spain, led the study. The amount of plastic in the oceans should be on the order of millions of tons, he explains. However, the collected samples lead to estimates of just 7,000 to 35,000 tons of plastic floating at sea. That’s just one-hundredth of what they had expected.

3. **Debris** (*noun*) scattered pieces of waste or remains

4. A small piece of plastic, 5 millimeters or smaller in size. Microplastics may have been produced at that small size, or their size may be the result of the breakdown of water bottles, plastic bags or other things that started out larger.

Most plastic that C3zar's team fished out of the seas was either polyethylene or polypropylene. These two types are used in grocery bags, toys and food packaging. Polyethylene is also used to make microbeads. These tiny plastic beads can be found in some toothpastes and facial scrubs. When used, they wash down the drain. Too small to be trapped in filters at wastewater treatment plants, microbeads continue to travel into rivers, lakes — and eventually down to the sea. Some of this plastic would have been too small to have been caught in C3zar's net.

- [15] Most of what C3zar's group found were fragments broken from larger items. That comes as no surprise.

In the oceans, plastic breaks down when it's exposed to light and wave action. The sun's ultraviolet (UV) rays weaken the otherwise strong chemical bonds within the plastic. Now, when waves smash the chunks against each other, the plastic breaks into smaller and smaller pieces.

When the Spanish team began sorting its plastic by size, the researchers expected to find larger numbers of the very smallest pieces. That is, they figured that most of the plastic should have been tiny fragments, measuring just millimeters (tenths of an inch) in size. (The same principle applies to cookies. If you were to smash a cookie, you would wind up with many more crumbs than you would large pieces.) Instead, the scientists found fewer of these tiny bits of plastic.

What had happened to them?

Entering the food web

C3zar proposes several possible explanations. The tiniest bits might have broken down quickly into particles too small to catch in his net. Or maybe something caused them to sink. But a third explanation seems even more likely: Something ate them.

- [20] Unlike the organic matter found in living things, plastics do not provide energy or nutrients⁶ to growing animals. Still, critters do eat plastic. Sea turtles and toothed whales gulp down plastic bags, mistaking them for squid. Sea birds scoop up floating plastic pellets, which can resemble fish eggs. Young albatross have been found dead from starvation, their stomachs full of plastic garbage. While feeding, adult seabirds skim floating trash with their beaks. Parent birds then regurgitate⁷ the plastic to feed their young. (These plastic bits eventually can kill them.)

Yet such large animals wouldn't eat pieces just millimeters in size. Zooplankton might, however. They are much smaller marine⁸ creatures.

"Zooplankton describe a whole range of animals, including fish, crab and shellfish larvae," explains Matthew Cole. He is a biologist at the University of Exeter in England. Cole has found that these tiny critters are just the right size to snap up the millimeter-size bits of plastic.

5. Someone who works in the field of oceanography, or the branch of science that deals with the physical and biological properties and phenomena of the oceans.
6. vitamins, minerals, fats, carbohydrates and proteins that are needed by organisms to live and comes mainly from one's diet
7. to vomit or throw up
8. having to do with the ocean or sea

His research team has collected zooplankton from the English Channel. In the lab, the experts added polystyrene beads to tanks of water holding the zooplankton. Polystyrene is found in Styrofoam and other brands of foam. After 24 hours, the team examined the zooplankton under a microscope. Thirteen of the 15 zooplankton species had swallowed the beads.

In a more recent study, Cole found that microplastics limit the ability of zooplankton to consume food. Zooplankton that had swallowed polystyrene beads ate smaller bits of algae. That cut their energy intake nearly in half. And they laid smaller eggs that were less likely to hatch. His team published its findings January 6 in *Environmental Science & Technology*.

- [25] “Zooplankton are very low on the food chain,” Cole explains. Still, he notes: “They are a really important food source for animals like whales and fish.” Reducing their population could have a widespread impact on the rest of the ocean ecosystem.

And, it turns out, not just tiny zooplankton are eating the plastic bits. Larger fish, crabs, lobster and shellfish do too. Scientists have even found plastic in the guts of marine worms.

Once there, the plastic tends to stick around.

In crabs, microplastics remain in the gut six times longer than food does, says Andrew Watts. He is a marine biologist⁹ at the University of Exeter. What’s more, eating plastic causes some species, such as marine worms, to store less fat, protein and carbohydrate, he explains. When a predator (such as a bird) now eats those worms, it gets a less nutritious meal. It also ingests the plastic. With each meal consumed, more and more plastic makes its way into a predator’s body.

That’s cause for concern. “Plastics might pass up the food chain,” says Cole, “until it gets into food that ends up on our own dinner plates.”

An accumulating problem

- [30] The thought of eating plastic isn’t pleasant. But it isn’t just the plastic that’s cause for concern. Scientists also worry about a variety of chemicals found on the plastic. Some of those chemicals come from the manufacturing process, explains Kara Lavender Law. She is an oceanographer at the Sea Education Association in Woods Hole, Mass.

Plastics also attract a variety of dangerous pollutants,¹⁰ she notes. That’s because plastic is hydrophobic — just like oil, it repels water.

But plastic, oil and other hydrophobic substances are attracted to each other. So oily contaminants tend to glom onto pieces of plastic. In a way, plastic acts like a sponge, soaking up hydrophobic contaminants. The pesticide DDT¹¹ and polychlorinated biphenyls (or PCBs) are two such toxic¹² contaminants that have been found in ocean-going plastics.

9. A marine biologist is a scientist who studies creatures that live in ocean water, from bacteria and shellfish to kelp and whales.
10. a substance that poisons something — such as the air, water, soil, products, and living beings
11. short for dichlorodiphenyltrichloroethane
12. **Toxic** (*adjective*) containing poisonous substances

Even though both contaminants have been banned for decades, they are slow to break down. So they persist in the environment. To this day, they hitch a ride on trillions of pieces of plastic floating in the oceans.

One reason these contaminants were banned is because of the way they affect animals and people. When eaten, the chemicals work their way into an animal's tissues. And there they stay. The more of these chemicals a critter consumes, the more that gets stored in its tissues. That creates a constant exposure to the pollutants' toxic effects.

- [35] And it doesn't stop there. When a second animal eats that first critter, the contaminants move into the new animal's body. With each meal, more contaminants enter its tissues. In this way, what had started as trace amounts of a contaminant will become increasingly concentrated as they move up the food chain.

Whether contaminants hitching a ride on plastic work their way into the body tissues of marine animals in the same way remains unknown. But scientists are concerned that they might. Just how much of these chemicals in marine organisms came from eating contaminated plastic and how much from eating contaminated food is a big question, says Law. And no one yet knows whether the problem affects people.

Managing microplastics

The very nature of microplastics makes cleanup impossible. They are so tiny and so widespread that there is no way to remove them from the seas, notes Law.

The best solution is to prevent more plastic from reaching the ocean. Trash traps and litter booms can snag garbage before it enters waterways. Even better: Reduce plastic waste at its source. Be aware of packaging and buy items that use less of it, Law suggests. Skip the plastic bags, including zippered ones used for foods. Invest in reusable water bottles and lunch containers. And say no to straws.

Law also recommends asking restaurants to stop using polystyrene foam containers. These break up quickly and are not recyclable. Talk to friends and parents about the problems of plastic, and pick up litter when you see it.

- [40] Law recognizes that reducing plastic use won't be an easy change. "We live in an era of convenience," she says. And people find it convenient to throw things away when they are done with them.

That's not to say that we should do away with plastic altogether. "Plastic has a lot of beneficial uses," says Law. But people need to stop looking at plastic as disposable, she argues. They need to view plastic items as durable things to hold on to and reuse.

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Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. In your own words, summarize the central ideas of this article.

2. What is the purpose of paragraph 1?

- A. to make readers curious about the “hidden” pollution
- B. to introduce the topic of pollution on the ground and in trees
- C. to argue that pollution on land is a more serious problem than pollution in the ocean
- D. to claim that pollution is becoming harder to see because people are ignoring it

3. Based on the information in paragraph 4, what is the likely reason why experts have found less plastic floating in the ocean than they expected? Cite evidence from the text.

4. PART A: As it is used in paragraph 10, the word “abundant” most closely means —

- A. dangerous.
- B. minimal.
- C. challenging.
- D. widespread.

Music

20th Century Pop Music

BAND MUSIC

Beginning in the latter part of the 1800s, band concerts became wildly popular, particularly in the early 20th century, as a form of casual entertainment. They consisted of transcriptions of orchestral music, arrangements of popular tunes of the day, accessible original pieces composed for band, and, most importantly, marches.

JAZZ

Jazz is a form of popular music that began its development around the turn of the century. Jazz can be distinguished by many characteristics, but two of the most prominent traits are the heavy use of syncopation and the frequent employment of improvisation in performance.

One of the earliest and most important jazz-influenced genres was ragtime, which had its origins in African-American spirituals, European marches, and the minstrel show music of the 19th century. The most famous ragtime composer was Scott Joplin (1868–1917).

In addition to ragtime, another primary source of jazz was the blues. The blues was rooted in African-American field hollers, work songs, and spirituals of the rural southern United States. The blues was a form of vocal music based on sad subjects, sometimes about love or life crises. "Jelly Roll" Morton (1890–1941) was a well-known blues pianist who performed across the southern United States.

In New Orleans, Louisiana, in the southern United States, a prominent jazz style developed during the 1920s and 1930s. Influenced by the blues and ragtime, a rich local brass band came together to create a new type of music called Dixieland jazz. The music of trumpeter and singer Louis Armstrong (c. 1898–1971) was highly influential in developing jazz music. Some other well-known Dixieland musicians were trumpeter Bix Beiderbecke, trombonist Edward "Kid" Ory, clarinetist Sidney Bechet, and bandleader and trumpeter King Oliver.

Jazz music evolved throughout the 20th century and is still popular today. In the 1930s and 1940s, "big bands," usually consisting of ten players or more, played dance music called "swing." Swing became very popular with young people throughout the United States and Europe. It was performed in a triplet swing rhythm style. Two of the prominent early big band leaders were Fletcher Henderson and Paul Whiteman. The big band boom of the 1930s and 1940s brought together the greatest jazz musicians of the day to play with bands led by prominent big band leaders such as clarinetist Benny Goodman, trombonist Tommy Dorsey, saxophonist Jimmy Dorsey, trombonist and arranger Glenn Miller, clarinetist and saxophonist Woody Herman, pianist and composer Duke Ellington, and pianist Count Basie. Stan Kenton (1911–1979) was the leader of a succession of different big bands. Thad Jones (1923–1986) was a cornetist, flugelhorn player, composer, and bandleader whose works have become big band classics. Jazz singers during the big band era included Billie Holiday, Ella Fitzgerald, Frank Sinatra, Bing Crosby, and Joe Williams.

Rock

Rock music grew out of the rich tradition of American popular music, especially the blues. The evolution started when blues music migrated from rural areas to cities. The development continued after World War II, when blues bands added an electric guitar and bass. Players of these new instruments, along with those playing drums, piano, saxophones, and brass, joined vocalists to perform an urban style of blues which eventually came to be known as rhythm and blues. Another developing style of the period was country music, which also developed from the blues. Elvis Presley combined rhythm and blues with country in the new wildly popular genre of rock and roll in the 1950s.

Rock and roll in the 1960s developed into a music style simply called "rock." Rock was different from rock and roll; it had a freer form, more electric amplification and distortion of sound, and offered more room for improvisation. As rock evolved in the late 20th century, music became a platform to reflect social causes, personal history, and political viewpoints, and it also encompassed a variety of styles and performance methods that include reggae, progressive rock, heavy metal, hip hop, and rap. The Rolling Stones and The Beatles particularly echoed the blues and R&B sound. The band U2 from Dublin, Ireland, frequently coupled their activism in human rights and social justice issues with a music style that reflected a technological edge even while embracing their rock and roll roots.

20th Century Pop Music

1. Name one important composer or performer in each of the following 20th century pop music styles.

a. Ragtime

b. Blues

c. Dixieland

d. Big Band

e. Swing

f. Rock

2. Band music became widely popular starting in the latter part of which century?

3. Name the most famous ragtime composer.

4. The blues were rooted in which styles of African-American music?

5. What style of music is associated with "big bands"?

6. How was "rock" music different than "rock and roll"?

7. The 20th century, beginning to end, became the greatest transitional period for music to date.

☐ True

☐ False

English

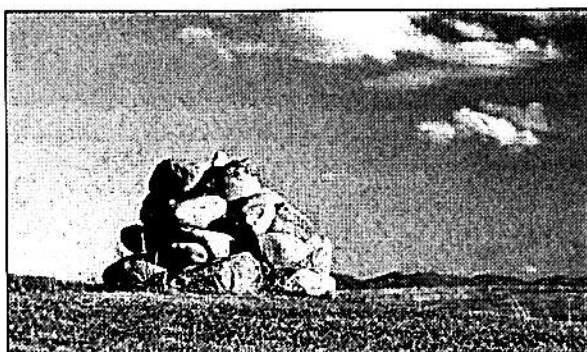
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The Lottery

By Shirley Jackson
1948

Shirley Jackson (1916-1965) was an American writer whose writing was popular during her life and continues to be studied by literary critics today. In Jackson's most well-known short story, "The Lottery," a town participates in an annual ritual.

- [1] The morning of June 27th was clear and sunny, with the fresh warmth of a full-summer day; the flowers were blossoming profusely¹ 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 26th, 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 Cairn, Tekapo golf course," by Bernard Spragg. NZ is in the public domain.

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 boisterous² play, and their talk was still of the classroom and the teacher, of books and reprimands.³ 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 raids⁴ of the other boys. The girls stood aside, talking among themselves, looking over their shoulders at the boys, and the very small children 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.

1. **Profusely** (*adverb*) to a great degree or in large amounts
2. **Boisterous** (*adjective*) noisy, energetic, or wild
3. **Reprimand** (*noun*) a scolding
4. a sudden attack

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 civic⁵ activities. He was a round-faced, jovial⁶ 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,⁷ 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.

- [5] The original paraphernalia⁸ 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 the 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 away, 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,⁹ 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 part 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.

5. relating to a city or town

6. **Jovial** (*adjective*) friendly and cheerful

7. a person in charge of a post office

8. the equipment needed for a particular activity

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.

- [10] "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 yet," Mrs. Dunbar said regretfully. "Guess I gotta fill in for the old man this year."

- [15] "Right," Mr. 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 m'mother and me." He blinked his eyes nervously and ducked his head as several voices in the crowd said things like "Good fellow, Jack," 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?"

- [20] 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."

- [25] "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 hands, 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.

- [30] "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 that 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.¹⁰ "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."

- [35] "Martin." And Bobby Martin watched his father go forward. "Overdyke... Percy."

10. **Petulant** (*adjective*) disrespectful or bad-tempered

"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."

- [40] "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, saying, "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.

- [45] 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!"

- [50] "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.

[55] "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."

[60] 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 over-large, nearly knocked the box over as he got a paper out. "Tessie," Mr. Summers said. She hesitated for a minute, looking around defiantly,¹¹ and then set her lips and went up to the box. She snatched a paper out and held it behind her.

[65] "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."

11. **Defiant** (*adjective*) boldly resistant or challenging

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.

- [70] "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.

"It's Tessie," Mr. Summers said, and his voice was hushed. "Show us her paper, Bill."

Bill Hutchinson went over to his wife and forced the slip of paper out of her hand. It had a black spot on it, the black spot Mr. Summers had made the night before with the heavy pencil in the coal company office. Bill Hutchinson held it up, and there was a stir in the crowd.

"All right, folks," Mr. Summers said, "let's finish quickly."

Although the villagers had forgotten the ritual and lost the original black box, they still remembered to use stones. The pile of stones the boys had made earlier was ready; there were stones on the ground with the blowing scraps of paper that had come out of the box. Mrs. Delacroix selected a stone so large she had to pick it up with both hands and turned to Mrs. Dunbar. "Come on," she said. "Hurry up."

- [75] Mrs. Dunbar had small stones in both hands, and she said, gasping for breath, "I can't run at all. You'll have to go ahead and I'll catch up with you."

The children had stones already. And someone gave little Davy Hutchinson a few pebbles.

Tessie Hutchinson was in the center of a cleared space by now, and she held her hands out desperately as the villagers moved in on her. "It isn't fair," she said. A stone hit her on the side of the head.

Old Man Warner was saying, "Come on, come on, everyone." Steve Adams was in the front of the crowd of villagers, with Mrs. Graves beside him.

"It isn't fair, it isn't right," Mrs. Hutchinson screamed, and then they were upon her.

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Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. The description of the lottery in paragraph 1 is meant to make the reader feel —
 - A. suspicious about the true meaning of the lottery.
 - B. that the lottery is a pleasant tradition.
 - C. certain something bad will happen.
 - D. that the lottery is very important.

2. Which of the following describes a theme of the text?
 - A. Even if something is cruel, people have the tendency to follow the crowd and participate.
 - B. Sometimes a few people must be sacrificed to ensure the group's survival.
 - C. Important decisions should not be made by lotteries.
 - D. Traditions help people understand the past.

3. PART A: What purpose does Old Man Warner's character best serve in the story?
 - A. He represents the value of overcoming hardship.
 - B. He represents the importance of respecting one's elders.
 - C. He represents the acceptance of change in traditions over time.
 - D. He represents the fear of change and desire to follow traditions.

4. PART B: Which detail from the text best supports the answer to Part A?
 - A. "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." (Paragraph 5)
 - B. "'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.'" (Paragraph 31)
 - C. "'There's always been a lottery,' he added petulantly. 'Bad enough to see young Joe Summers up there joking with everybody.'" (Paragraph 32)
 - D. "'Seventy-seventh year I been in the lottery,' Old Man Warner said as he went through the crowd. 'Seventy-seventh time.'" (Paragraph 40)

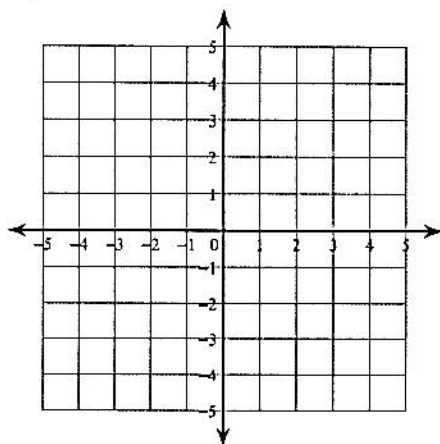
5. How does the detail "And someone gave little Davy Hutchinson a few pebbles" contribute to the text (Paragraph 76)?
 - A. It emphasizes that the children no longer understand the violence of the lottery.
 - B. It shows that Davy doesn't like his mother and wishes to hurt her.
 - C. It reveals that no one expects Davy to seriously injure his mother.
 - D. It stresses that everyone participates in the lottery, even Mrs. Hutchinson's son.

Math

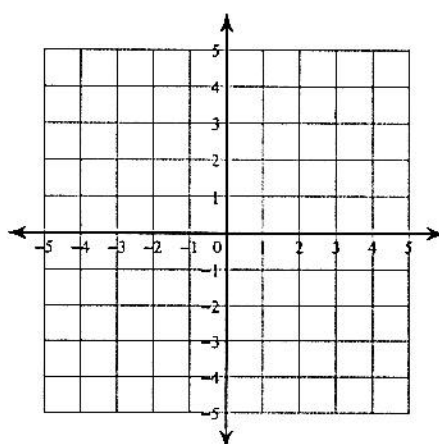
Systems of Two Equations

Solve each system by graphing.

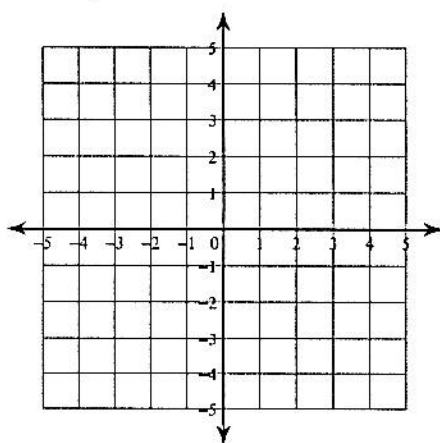
1) $y = -3x + 4$
 $y = 3x - 2$



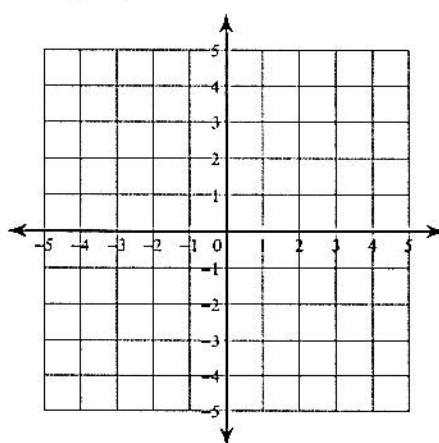
2) $y = x + 2$
 $x = -3$



3) $x - y = 3$
 $7x - y = -3$



4) $4x + y = 2$
 $x - y = 3$



Solve each system by substitution.

5) $y = 4x - 9$
 $y = x - 3$

6) $4x + 2y = 10$
 $x - y = 13$

7) $y = -5$
 $5x + 4y = -20$

8) $x + 7y = 0$
 $2x - 8y = 22$

$$\begin{aligned} 9) \quad & 6x + 8y = -22 \\ & y = -5 \end{aligned}$$

$$\begin{aligned} 11) \quad & 7x + 2y = -19 \\ & -x + 2y = 21 \end{aligned}$$

$$\begin{aligned} 13) \quad & -7x + 4y = 24 \\ & 4x - 4y = 0 \end{aligned}$$

$$\begin{aligned} 10) \quad & -7x + 2y = 18 \\ & 6x + 6y = 0 \end{aligned}$$

$$\begin{aligned} 12) \quad & 3x - 5y = 17 \\ & y = -7 \end{aligned}$$

$$\begin{aligned} 14) \quad & 4x - y = 20 \\ & -2x - 2y = 10 \end{aligned}$$

Solve each system by elimination.

$$\begin{aligned} 15) \quad & 8x - 6y = -20 \\ & -16x + 7y = 30 \end{aligned}$$

$$\begin{aligned} 16) \quad & 6x - 12y = 24 \\ & -x - 6y = 4 \end{aligned}$$

$$\begin{aligned} 17) \quad & -8x - 10y = 24 \\ & 6x + 5y = 2 \end{aligned}$$

$$\begin{aligned} 18) \quad & -24 - 8x = 12y \\ & 1 + \frac{5}{9}y = -\frac{7}{18}x \end{aligned}$$

$$\begin{aligned} 19) \quad & -4y - 11x = 36 \\ & 20 = -10x - 10y \end{aligned}$$

$$\begin{aligned} 20) \quad & -9 + 5y = -4x \\ & -11x = -20 + 9y \end{aligned}$$

$$\begin{aligned} 21) \quad & 0 = -2y + 10 - 6x \\ & 14 - 22y = 18x \end{aligned}$$

$$\begin{aligned} 22) \quad & -16y = 22 + 6x \\ & -11y - 4x = 15 \end{aligned}$$

$$\begin{aligned} 23) \quad & -16 + 20x - 8y = 0 \\ & 36 = -18y - 22x \end{aligned}$$

$$\begin{aligned} 24) \quad & -\frac{5}{7} - \frac{11}{7}x = -y \\ & 2y = 7 + 5x \end{aligned}$$

Critical thinking questions:

25) Write a system of equations with the solution $(4, -3)$.

Science

Digital Learning Day - April 2 - 8th Science

I would like you to read the Technology and Society on pages 64-65 in your book, and you are to do the Weigh the Impact box (1-2-3). You can use the bottom of this sheet, or you can use google docs and share it with me.

PE/Health

4/2/21 Digital Learning Day PE

Today I would like you to take a walk outside. While you are walking I want you to look for the following items. It is ok if you don't find everything, if you see something neat that is not on the list write it down.

Cloud

Worm

Bike

Fence

Red car

Trash can

Mailbox

Flag

Basketball hoop

Pinecone

Street sign

Anything else you saw?