GreatHearts
Northern Oaks

Supplemental Reading Packet
Week 7

May 4 - May 8, 2020

3rd grade

(3A) Ms. Gauss

(3B) Ms. Tyler

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Student Name: _____ Section: __

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I

ONCE WHEN I WAS six I saw a magnificent picture in a book about the jungle, called *True Stories*. It showed a boa constrictor swallowing a wild beast. Here is a copy of the picture.

In the book it said: "Boa constrictors swallow their prey whole, without chewing. Afterward they are no longer able to move, and they sleep during the six months of their digestion."

In those days I thought a lot about jungle adventures, and eventually managed to make my first drawing, using a colored pencil. My drawing Number One looked like this:
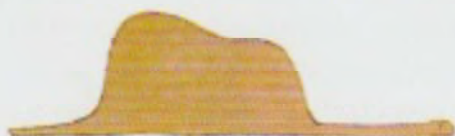
I showed the grown-ups my masterpiece, and I asked them if my drawing scared them.

They answered, "Why be scared of a hat?"

My drawing was not a picture of a hat. It was a picture of a boa constrictor digesting an elephant. Then I drew the inside of the boa constrictor, so the grown-ups could understand. They always need explanations. My drawing Number Two looked like this:

The grown-ups advised me to put away my drawings of boa constrictors, outside or inside, and apply myself instead to geography, history, arithmetic, and grammar. That is why I abandoned, at the age of six, a magnificent career as an artist. I had been discouraged by the failure of my drawing Number One and of my drawing Number Two. Grown-ups never understand anything by themselves, and it is exhausting for children to have to provide explanations over and over again.

So then I had to choose another career, and I learned to pilot airplanes. I have flown almost everywhere in the world. And, as a matter of fact, geography has been a big help to me. I could tell China from Arizona at first glance, which is very useful if you get lost during the night.

So I have had, in the course of my life, lots of encounters with lots of serious people. I have spent lots of time

with grown-ups. I have seen them at close range . . . which hasn't much improved my opinion of them.

Whenever I encountered a grown-up who seemed to me at all enlightened, I would experiment on him with my drawing Number One, which I have always kept. I wanted to see if he really understood anything. But he would always answer, "That's a hat." Then I wouldn't talk about boa constrictors or jungles or stars. I would put myself on his level and talk about bridge and golf and politics and neckties. And my grown-up was glad to know such a reasonable person.

II

So I LIVED all alone, without anyone I could really talk to, until I had to make a crash landing in the Sahara Desert six years ago. Something in my plane's engine had broken, and since I had neither a mechanic nor passengers in the plane with me, I was preparing to undertake the difficult repair job by myself. For me it was a matter of life or death: I had only enough drinking water for eight days.

The first night, then, I went to sleep on the sand a thousand miles from any inhabited country. I was more isolated than a man shipwrecked on a raft in the middle of the ocean. So you can imagine my surprise when I was awakened at daybreak by a funny little voice saying, "Please . . . draw me a sheep . . ."

"What!"

"Draw me a sheep . . ."

I leaped up as if I had been struck by lightning. I rubbed my eyes hard. I stared. And I saw an extraordinary little fellow staring back at me very seriously. Here is the best portrait I managed to make of him, later on. But of course my drawing is much less attractive than my model. This is not my fault. My career as a painter was discouraged at the age of six by the grown-ups, and I had never learned to draw anything except boa constrictors, outside and inside.

So I stared wide-eyed at this apparition. Don't forget that I was a thousand miles from any inhabited territory. Yet this little fellow seemed to be neither lost nor dying of exhaustion, hunger, or thirst; nor did he seem scared to death. There was nothing in his appearance that suggested a child lost in the middle of the desert a thousand miles from any inhabited territory. When I finally managed to speak, I asked him, "But . . . what are you doing here?"

And then he repeated, very slowly and very seriously, "Please . . . draw me a sheep . . ."

In the face of an overpowering mystery, you don't dare disobey. Absurd as it seemed, a thousand miles from all inhabited regions and in danger of death, I took a scrap of paper and a pen out of my pocket. But then I remembered that I had mostly studied geography, history, arithmetic, and grammar, and I told the little fellow (rather crossly) that I didn't know how to draw.

He replied, "That doesn't matter. Draw me a sheep."

Since I had never drawn a sheep, I made him one of

Here is the best portrait I managed to make of him, later on.

the only two drawings I knew how to make—the one of the boa constrictor from outside. And I was astounded to hear the little fellow answer:

"No! No! I don't want an elephant inside a boa constrictor. A boa constrictor is very dangerous, and an elephant would get in the way. Where I live, everything is very small. I need a sheep. Draw me a sheep."

So then I made a drawing.

He looked at it carefully, and then said, "No. This one is already quite sick. Make another."

I made another drawing. My friend gave me a kind, indulgent smile:

"You can see for yourself . . . that's not a sheep, it's a ram. It has horns . . ."

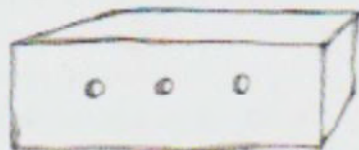So I made my third drawing, but it was rejected, like the others:

"This one's too old. I want a sheep that will live a long time."

So then, impatiently, since I was in a hurry to start work on my engine, I scribbled this drawing, and added, "This is just the crate. The sheep you want is inside."

But I was amazed to see my young critic's face light up. "That's just the kind I wanted! Do you think this sheep will need a lot of grass?"

"Why?"

"Because where I live, everything is very small . . ."

"There's sure to be enough. I've given you a very small sheep."

He bent over the drawing. "Not so small as all that . . . Look! He's gone to sleep . . ."

And that's how I made the acquaintance of the little prince.

III

IT TOOK ME a long time to understand where he came from. The little prince, who asked me so many questions, never seemed to hear the ones I asked him. It was things he said quite at random that, bit by bit, explained everything. For instance, when he first caught sight of my airplane (I won't draw my airplane; that would be much too complicated for me) he asked:

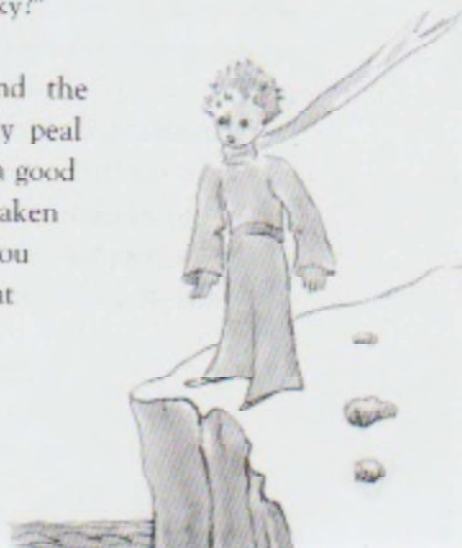"What's that thing over there?"

"It's not a thing. It flies. It's an airplane. My airplane."

And I was proud to tell him I could fly. Then he exclaimed:

"What! You fell out of the sky?"

"Yes," I said modestly.

"Oh! That's funny . . ." And the little prince broke into a lovely peal of laughter, which annoyed me a good deal. I like my misfortunes to be taken seriously. Then he added, "So you fell out of the sky, too. What planet are you from?"

2 Perimeter

Sue used 3 pieces of wire of the same length to make the triangle, the square and the rectangle.
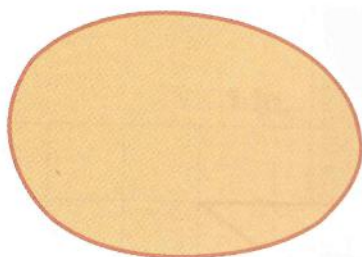
1 cm

1 cm
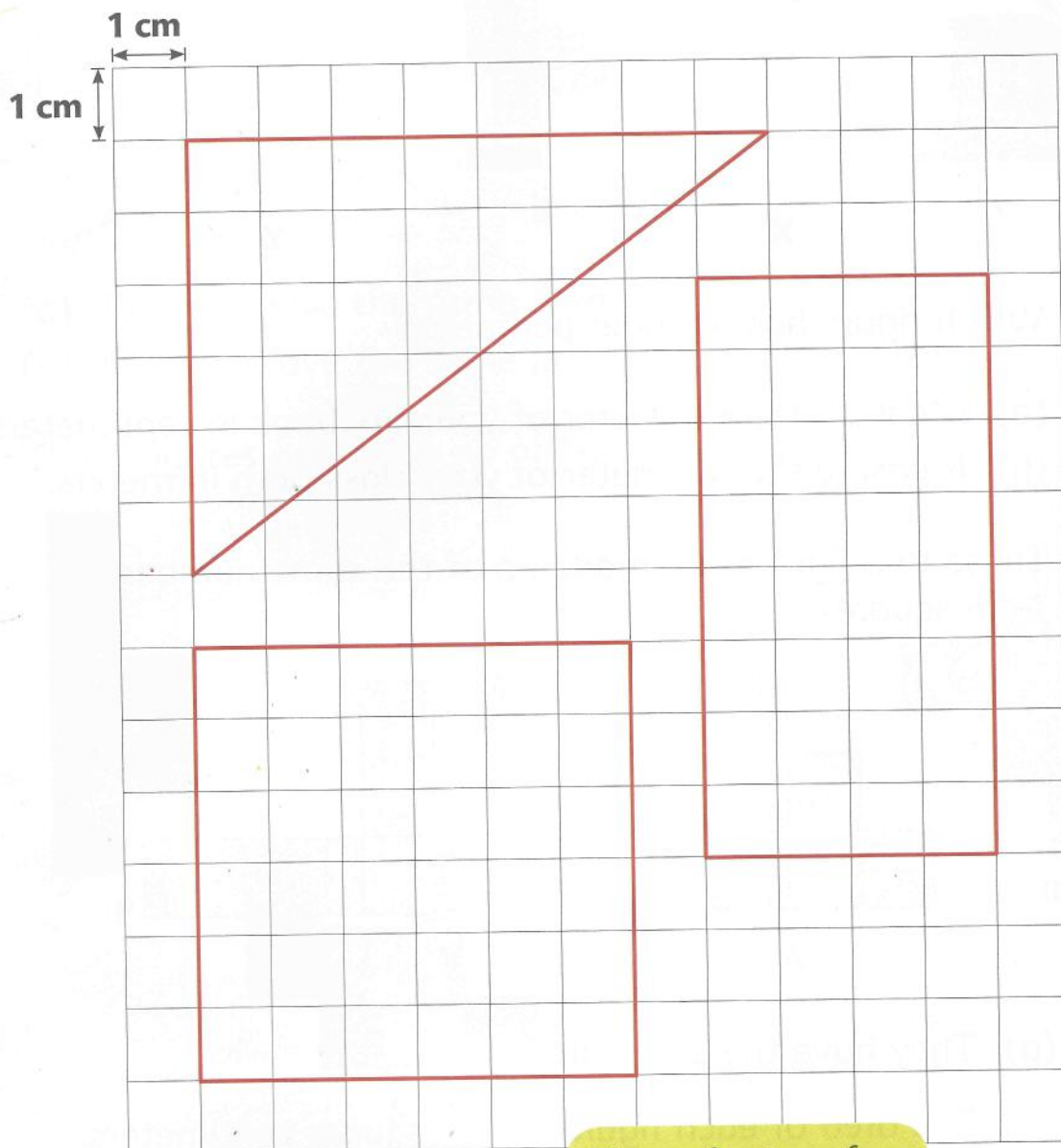
The **perimeter** of a figure is the distance around the figure.

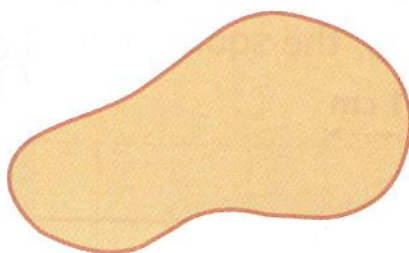They have the same perimeter.
The perimeter of each figure is ▮ cm.

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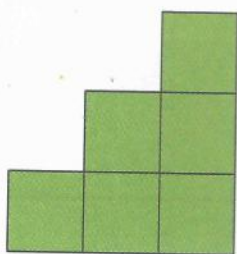1. Measure with thread, the perimeter of each of these figures.

X

Y

Which figure has a longer perimeter?

2. (a) Measure the perimeter of your textbook in centimeters.
   (b) Measure the perimeter of your classroom in meters.

3. These two figures are made up of the same number of 1-cm squares.

A

B

(a) They have the same area.

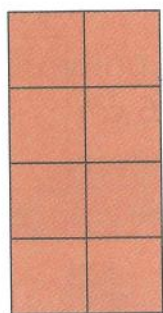The area of each figure is ⬜ square centimeters.

(b) They have different perimeters.

The perimeter of Figure A is ⬜ cm.

The perimeter of Figure B is ⬜ cm.

4. These figures are made up of 1-cm squares.
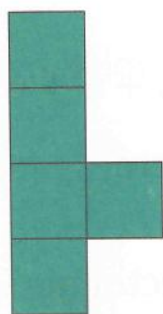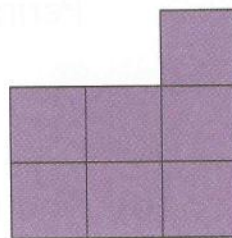
A   B   C

   (a) Do they have the same area?
   (b) Do they have the same perimeter?
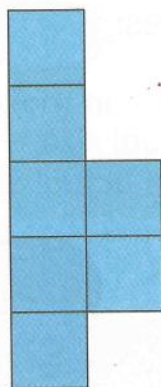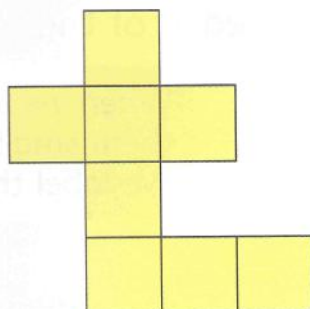
5. These figures are made up of 1-cm squares.
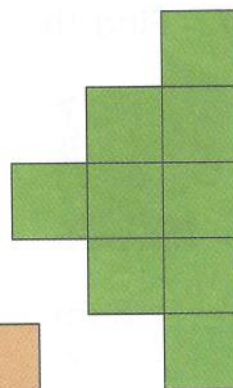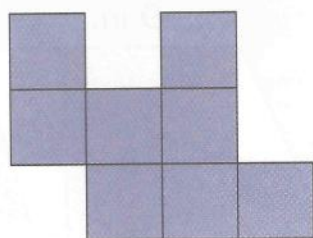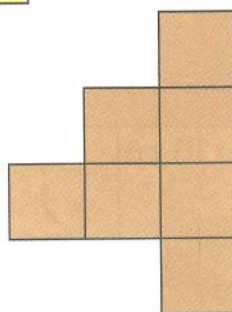
P   Q   R   S   T

   (a) Which two figures have the same area but
        different perimeters?
   (b) Which two figures have the same perimeter but
        different areas?
   (c) Which two figures have the same area and perimeter?

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6. (a) Each side of the square is 6 cm long.
   Find its perimeter.

   Perimeter = 6 + 6 + 6 + 6

   = ⬤ cm

   6 cm

   6 cm
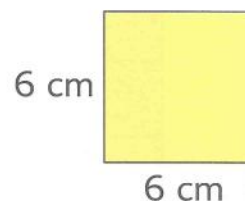
   (b) The length of the rectangle is 12 cm.
   Its width is 4 cm.
   Find its perimeter.

   Perimeter = 12 + 4 + 12 + 4

   = ⬤ cm

   4 cm

   12 cm
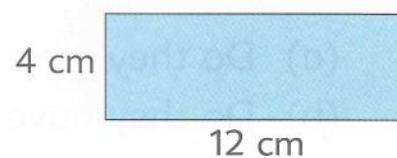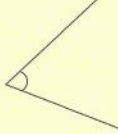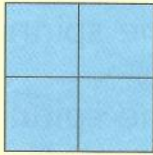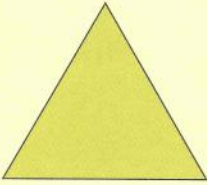
7. Find the perimeter of each of the following figures:

   When we draw figures, we can make them smaller than the actual size. We label the sides with the actual sizes.

   8 cm   A   7 cm

   10 cm

   9 in.

   7 in.   B   6 in.

   12 in.

   6 cm

   8 cm

   C

   5 cm

   3 cm

   8 cm

   6 in.

   3 in.   D   10 in.

   4 in.

   16 in.

   150
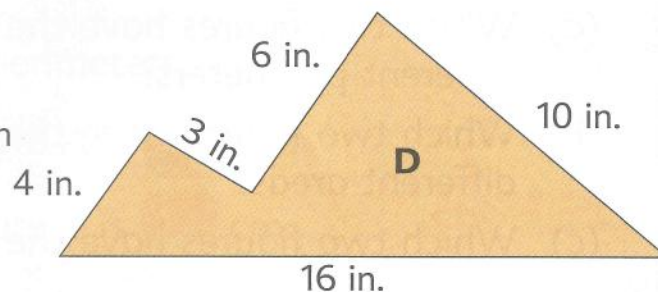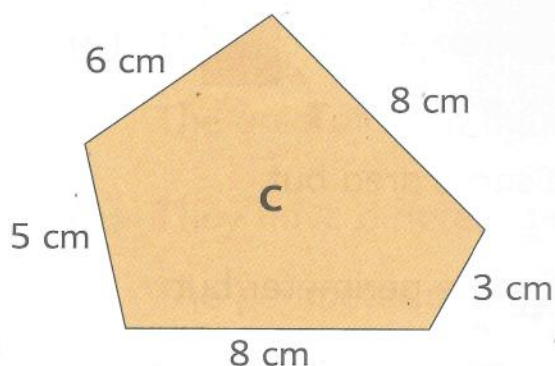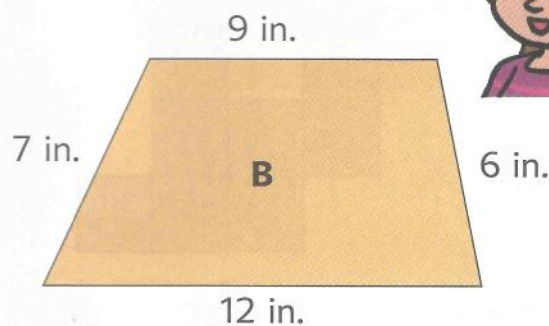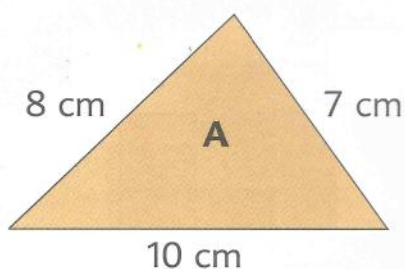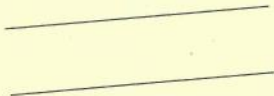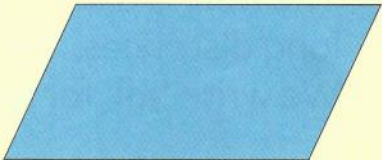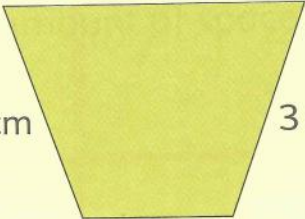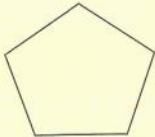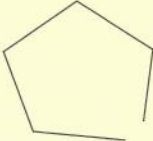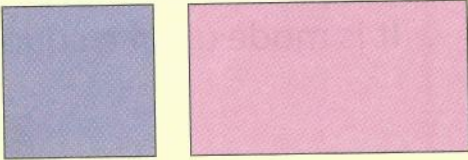
GLOSSARY

Word	Meaning
a.m.	**a.m.** is used to tell the time after 12:00 midnight and before 12:00 noon. It is eight o'clock in the morning. The time is 8:00 **a.m.**
angle	When two straight lines meet, they form an **angle.**
area	The **area** of a figure is the amount of flat space it covers. The area of the above figure is 4 square centimeters.
denominator	In the fraction $\frac{1}{2}$, '2' is the **denominator**. $\frac{1}{2}$ ←—— denominator
equilateral triangle	An **equilateral triangle** is a triangle that has three equal sides.
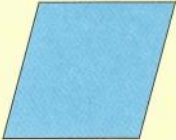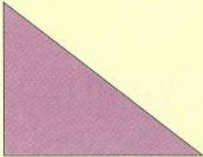
Word	Meaning
equivalent fractions	**Equivalent fractions** are different ways of writing the same fraction. $\frac{1}{3}$ and $\frac{2}{6}$ are equivalent fractions.
hexagon	A **hexagon** is a polygon with six sides.
intersect	When two straight lines **intersect**, they cross each other at one point.
isosceles triangle	An **isosceles triangle** is a triangle that has two equal sides.
kilometer	The **kilometer** is a unit of length used to measure long distances. We write **'km'** for kilometer. 1 kilometer = 1000 meters
mile	The **mile** is a unit of length used to measure long distances. We write **'mi'** for mile. 1 mile = 5280 feet
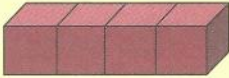
Word	Meaning
milliliter	A **milliliter** is a unit of volume. We write **'ml'** for milliliter. 1000 milliliters = 1 liter
numerator	In the fraction $\frac{1}{2}$, '1' is the **numerator**. $\frac{1}{2}$ $\longleftarrow$ numerator
octagon	An **octagon** is a polygon with eight sides.
p.m.	**p.m.** is used to tell the time after 12:00 noon and before 12:00 midnight. It is eight o'clock in the evening. The time is 8:00 **p.m.**
parallel	When two straight lines are **parallel**, they do not cross each other no matter how long you extend them.
parallelogram	A **parallelogram** is a quadrilateral that has 2 pairs of sides that are parallel.

Word	Meaning
pentagon	A **pentagon** is a polygon with five sides.
perimeter	The **perimeter** of a figure is the distance around the figure. 4 cm 3 cm 3 cm The perimeter of this figure is $4 + 3 + 2 + 3 = 12$ cm 2 cm
polygon	A **polygon** is a closed figure with straight sides. This figure is a polygon. This figure is **not** a polygon.
quadrilateral	A **quadrilateral** is a polygon with four sides. Squares and rectangles are examples of quadrilaterals.

Word	Meaning
rhombus	A **rhombus** is a parallelogram that has four equal sides.
right angle	A **right angle** is the angle found in the corners of squares and rectangles.
right triangle	A **right triangle** is a triangle with a right angle.
scalene triangle	An **scalene triangle** is a triangle that has no equal sides.
second	A **second** is a unit of time. We write '**s**' for seconds. 60 seconds = 1 minute
square centimeter	A **square centimeter** is a unit of area. It is made up of a square with 1 cm sides.

Word	Meaning
square inch	A **square inch** is a unit of area. It is made up of a square with 1 in. sides.
volume	The **volume** of a solid is the amount of space it takes up. The volume of the solid is 4 cubic units.

Perimeter

The distance around a figure is the perimeter of the figure. The centimeter and inch are units of perimeter.
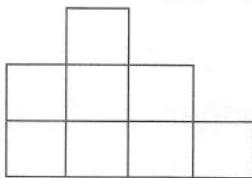
Shape A
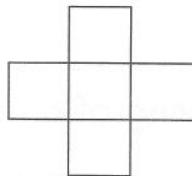
Shape B
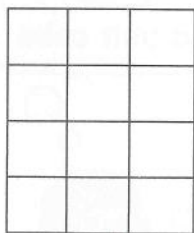
Shape C
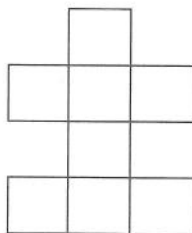
Shape D

Shape A and Shape C have the same perimeter.
Shape D has the greatest perimeter.
Shape A and Shape D have the same area but different perimeter.

The perimeter of the quadrilateral shown below is 29 in.
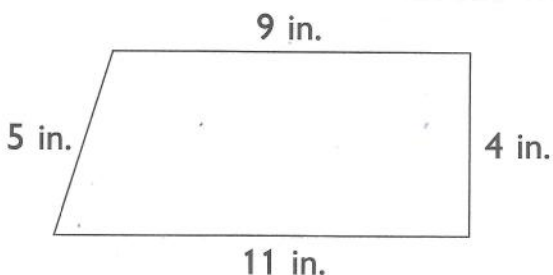
9 in.

5 in.

4 in.

11 in.

When we draw figures, we can make them smaller than the actual size. We label the sides with the actual lengths.

Primary Mathematics (Standards Edition) Extra Practice 3

Tuesday

3rd Grade | Week 7 | 05/05

"Because where I live, everything is very small . . ."

"There's sure to be enough. I've given you a very small sheep."

He bent over the drawing. "Not so small as all that . . . Look! He's gone to sleep . . ."

And that's how I made the acquaintance of the little prince.

III

IT TOOK ME a long time to understand where he came from. The little prince, who asked me so many questions, never seemed to hear the ones I asked him. It was things he said quite at random that, bit by bit, explained everything. For instance, when he first caught sight of my airplane (I won't draw my airplane; that would be much too complicated for me) he asked:

"What's that thing over there?"

"It's not a thing. It flies. It's an airplane. My airplane."

And I was proud to tell him I could fly. Then he exclaimed:

"What! You fell out of the sky?"

"Yes," I said modestly.

"Oh! That's funny . . ." And the little prince broke into a lovely peal of laughter, which annoyed me a good deal. I like my misfortunes to be taken seriously. Then he added, "So you fell out of the sky, too. What planet are you from?"

That was when I had the first clue to the mystery of his presence, and I questioned him sharply. "Do you come from another planet?"

But he made no answer. He shook his head a little, still staring at my airplane. "Of course, *that* couldn't have brought you from very far . . ." And he fell into a reverie that lasted a long while. Then, taking my sheep out of his pocket, he plunged into contemplation of his treasure.

YOU CAN IMAGINE how intrigued I was by this hint about "other planets." I tried to learn more: "Where do you come from, little fellow? Where is this 'where I live' of yours? Where will you be taking my sheep?"

After a thoughtful silence he answered, "The good thing about the crate you've given me is that he can use it for a house after dark."

"Of course. And if you're good, I'll give you a rope to tie him up during the day. And a stake to tie him to."

This proposition seemed to shock the little prince.

"Tie him up? What a funny idea!"

"But if you don't tie him up, he'll wander off somewhere and get lost."

My friend burst out laughing again. "Where could he go?"

"Anywhere. Straight ahead . . ."

Then the little prince remarked quite seriously, "Even if he did, everything's so small where I live!" And he added, perhaps a little sadly, "Straight ahead, you can't go very far."

IV

THAT WAS HOW I had learned a second very important thing, which was that the planet he came from was hardly bigger than a house!

That couldn't surprise me much. I knew very well that except for the huge planets like Earth, Jupiter, Mars, and Venus, which have been given names, there are hundreds of others that are sometimes so small that it's very difficult to see them through a telescope. When an astronomer discovers one of them, he gives it a number instead of a name. For instance, he would call it "Asteroid 325."

I have serious reasons to believe that the planet the little prince came from is Asteroid B-612. This asteroid has been sighted only once by telescope, in 1909 by a Turkish astronomer, who had then made a formal demonstration of his discovery at an International Astronomical Congress. But no one had believed him on account of the way he was dressed. Grown-ups are like that.

Fortunately for the reputation of Asteroid B-612, a Turkish dictator ordered his people, on pain of death, to wear European clothes. The astronomer repeated his

demonstration in 1920, wearing a very elegant suit. And this time everyone believed him.

If I've told you these details about Asteroid B-612 and if I've given you its number, it is on account of the grown-ups. Grown-ups like numbers. When you tell them about a new friend, they never ask questions about what really matters. They never ask: "What does his voice sound like?" "What games does he like best?" "Does he collect butterflies?" They ask: "How old is he?" "How many brothers does he have?" "How much does he weigh?" "How much money does his father make?" Only then do they think they know him. If you tell grown-ups, "I saw a beautiful red brick house, with geraniums at the windows and doves on the roof . . . ," they won't be able to imagine such a house. You have to tell them, "I saw a house worth a hundred thousand francs." Then they exclaim, "What a pretty house!"

The Little Prince on Asteroid B-612

So if you tell them: "The proof of the little prince's existence is that he was delightful, that he laughed, and that he wanted a sheep. When someone wants a sheep, that proves he exists," they shrug their shoulders and treat you like a child! But if you tell them, "The planet he came from is Asteroid B-612," then they'll be convinced, and they won't bother you with their questions. That's the way they are. You must not hold it against them. Children should be very understanding of grown-ups.

But, of course, those of us who understand life couldn't care less about numbers! I should have liked to begin this story like a fairy tale. I should have liked to say:

"Once upon a time there was a little prince who lived on a planet hardly any bigger than he was, and who needed a friend . . ." For those who understand life, that would sound much truer.

The fact is, I don't want my book to be taken lightly. Telling these memories is so painful for me. It's already been six years since my friend went away, taking his sheep with him. If I try to describe him here, it's so I won't forget him. It's sad to forget a friend. Not everyone has had a friend. And I might become like the grown-ups who are no longer interested in anything but numbers. Which is still another reason why I've bought a box of paints and some pencils. It's hard to go back to drawing, at my age, when you've never made any attempts since the one of a boa from inside and the one of a boa from outside, at the age of six! I'll

certainly try to make my portraits as true to life as possible. But I'm not entirely sure of succeeding. One drawing works, and the next no longer bears any resemblance. And I'm a little off on his height, too. In this one the little prince is too tall. And here he's too short. And I'm uncertain about the color of his suit. So I grope in one direction and another, as best I can. In the end, I'm sure to get certain more important details all wrong. But here you'll have to forgive me. My friend never explained anything. Perhaps he thought I was like himself. But I, unfortunately, cannot see a sheep through the sides of a crate. I may be a little like the grown-ups. I must have grown old.

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"Isn't it true that sheep eat bushes?"

"Yes, that's right."

"Ah! I'm glad."

I didn't understand why it was so important that sheep should eat bushes. But the little prince added:

"And therefore they eat baobabs, too!"

13

Sizes and distances of solar-system objects are not drawn to scale.

Touring the Solar System

Imagine you are coming to the **solar system** as a stranger on a tour. There is a tour guide to provide information. You have a window to look out. The tour is about to start. What will you see?

The first view of the solar system is from space. From here, you can see the whole solar system. The most surprising thing is that the solar system is mostly empty. The **matter** is concentrated in tiny dots. And the dots are far apart. Most of the dots are planets.

There is a star in the center of the solar system. Four small planets orbit pretty close to the star. These are the rocky **terrestrial planets**.

Next, there is a region of small bits of matter orbiting the star. This is the **asteroid** belt.

Out farther, four large planets orbit the star. These are the **gas giant planets** made of gas.

Beyond the gas giant planets is a huge region of icy chunks of matter called the **Kuiper Belt**. Some of the chunks are big enough to be planets. A dwarf planet, Pluto, is one of the Kuiper Belt objects. Others have orbits that send them flying through the rest of the solar system.

144

The Sun

The Sun is a fairly average star. It is much like millions of other stars in the **Milky Way**. The Sun formed about 5 billion years ago. A cloud of gas began to spin. As it spun, it formed a sphere. The sphere got smaller and smaller. As it got smaller, it got hotter. Eventually, the sphere got so hot that it started to radiate light and heat. A star was born.

The Sun is made mostly of the gases hydrogen (72 percent) and helium (26 percent). It is huge. The **diameter** is about 1,384,000 kilometers (km). The diameter is the distance from one side of the Sun to the other through the center. That's about 109 times the diameter of Earth.

145
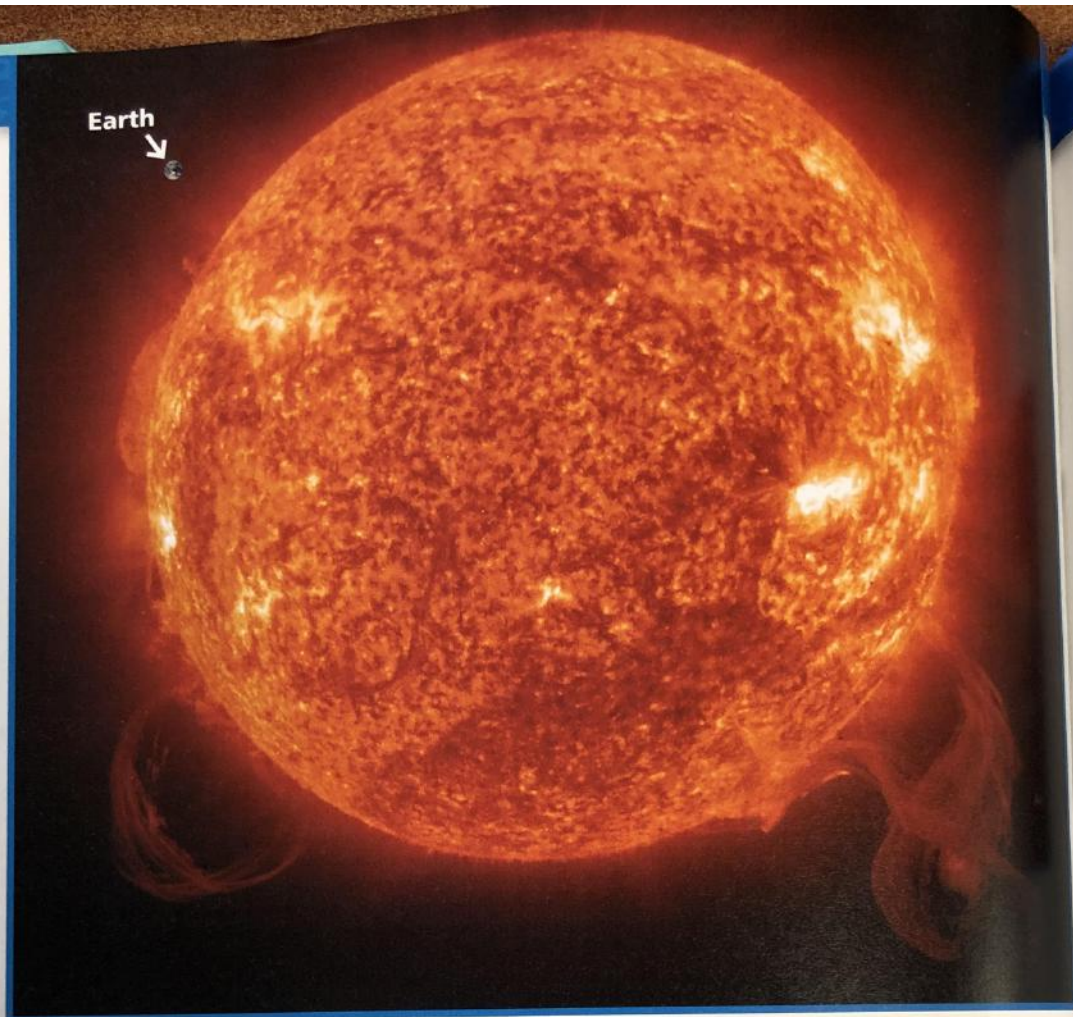
Earth

The Sun's diameter is about 109 times the diameter of Earth.

The Sun is incredibly hot. Scientists have figured out that the temperature at the center of the Sun is 15,000,000 degrees Celsius (°C). The temperature of the Sun's surface is lower, about 5,500°C. Inside the Sun, hydrogen is constantly changed into helium. This gives off huge amounts of heat and light energy. About 3.6 tons of the Sun's **mass** is being changed into heat and light every second to **transfer** energy. This energy radiates out from the Sun in all directions. A small amount of it falls on Earth.

Another name for the Sun is Sol. That's why the whole system of planets is called the solar system. The solar system is named for the ruling star. The Sun rules because of its size. It has 99.8 percent of the total mass of the solar system. All the other solar-system objects travel around the Sun in predictable, almost-circular orbits. The most obvious objects orbiting the Sun are the planets.

146

Terrestrial Planets

The terrestrial planets are the four planets closest to the Sun. They are small and rocky.

Mercury   Venus   Earth   Mars

Relative sizes of the terrestrial planets

Mercury

Mercury is the planet closest to the Sun. Mercury is smaller than Earth and has no **satellite** (moon). By human standards, it is an uninviting place. Mercury is very hot on the side facing the Sun and very cold on the dark side. It has no atmosphere or liquid water.

Mercury is covered with **craters**. The craters are the result of thousands of collisions with objects flying through space. The surface of Mercury looks a lot like Earth's Moon.

Mercury is the planet closest to the Sun.

147

Venus

Venus is the second planet from the Sun. Venus is about the same size as Earth and has no satellites. The surface of Venus is very hot all the time. It is hot enough to melt lead, making it one of the hottest places in the solar system.

There is no liquid water on Venus. But Venus does have an atmosphere of carbon dioxide. The dense, cloudy atmosphere makes it impossible to see the planet's surface. Modern radar, however, allows scientists to take pictures through the clouds. We now know that the surface of Venus is dry, cracked, and covered with volcanoes.
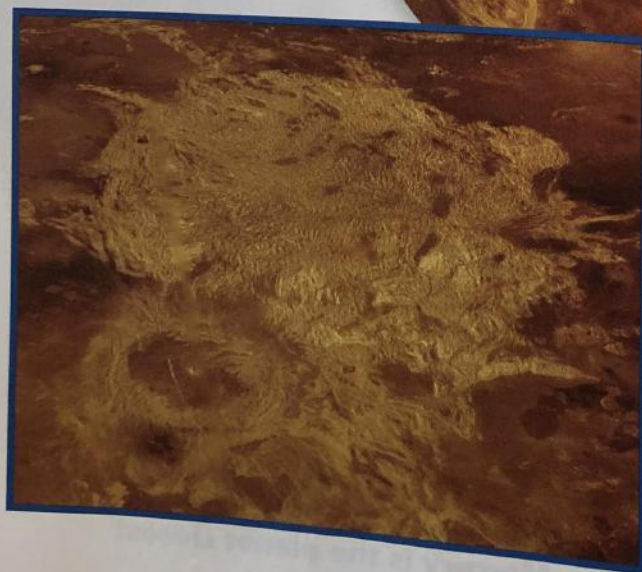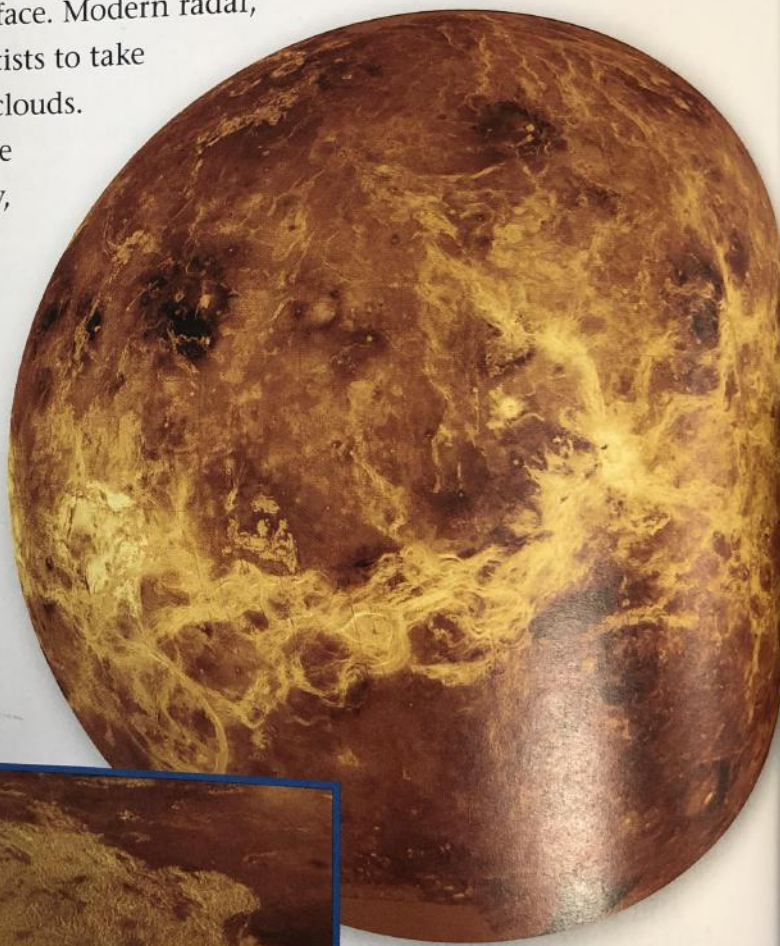
The surface of Venus is dry and covered with volcanoes.

148

Earth

Earth is the third planet from the Sun. Earth has a moderate, or mild, temperature all the time. It has an atmosphere of nitrogen and oxygen, and it has liquid water. As far as we know, Earth is the only place in the universe that has life. Earth also has one large satellite called the Moon. The Moon orbits Earth once a month. The Moon is responsible for the tides in Earth's ocean. The Moon is the only extraterrestrial place humans have visited.

Earth is 150 million km from the Sun. This is a huge distance. It's hard to imagine that distance, but think about this. Sit in one end zone of a football field and curl up into a ball. You are the Sun. A friend goes to the other end zone and holds up the eraser from a pencil. That's Earth. Get the idea? Earth is tiny, and it is a long distance from the Sun. Still, the light and heat that reach Earth provide the right amount of energy for life as we know it.

The Moon orbits Earth once a month.

149

Water frost on the surface of Mars

A robotic lander exploring Mars

Mars

Mars is the fourth planet from the Sun. It has two small satellites, Phobos and Deimos. Mars is a little like Earth, except it is smaller, colder, and drier. There are some places on Mars that are like Death Valley in California. Other places on Mars are more like Antarctica, and others are like the volcanoes of Hawaii.

Mars is sometimes called the red planet because of its red soil. The soil contains iron oxide, or rust. The iron oxide in the soil tells scientists that Mars probably had liquid water at one time. But liquid water has not been on Mars for 3.5 billion years. It has frozen water in polar ice caps that grow and shrink with its seasons.

Mars is likely the next place humans will visit. But exploring Mars will not be easy. Humans can't breathe the thin atmosphere of carbon dioxide. And explorers will need to wear life-support space suits for protection against the cold.

Several robotic landers, including *Viking, Spirit, Opportunity, Sojourner,* and *Curiosity* have observed Mars and sent back information about the surface and presence of water. Evidence suggests that there is a lot of frozen water just under the surface.

150

Wednesday

GHNO | 3rd Grade | Week 7 | 05/06

certainly try to make my portraits as true to life as possible. But I'm not entirely sure of succeeding. One drawing works, and the next no longer bears any resemblance. And I'm a little off on his height, too. In this one the little prince is too tall. And here he's too short. And I'm uncertain about the color of his suit. So I grope in one direction and another, as best I can. In the end, I'm sure to get certain more important details all wrong. But here you'll have to forgive me. My friend never explained anything. Perhaps he thought I was like himself. But I, unfortunately, cannot see a sheep through the sides of a crate. I may be a little like the grown-ups. I must have grown old.

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This time, too, I had the sheep to thank, for suddenly the little prince asked me a question, as if overcome by a grave doubt.

"Isn't it true that sheep eat bushes?"

"Yes, that's right."

"Ah! I'm glad."

I didn't understand why it was so important that sheep should eat bushes. But the little prince added:

"And therefore they eat baobabs, too!"

I pointed out to the little prince that baobabs are not bushes but trees as tall as churches, and that even if he took a whole herd of elephants back to his planet, that herd couldn't finish off a single baobab.

The idea of the herd of elephants made the little prince laugh.

"We'd have to pile them on top of one another."

But he observed perceptively:

"Before they grow big, baobabs start out by being little."

"True enough! But why do you want your sheep to eat little baobabs?"

He answered, "Oh, come on! You know!" as if we were talking about something quite obvious. And I was forced to make a great mental effort to understand this problem all by myself.

And, in fact, on the little prince's planet there were—as on all planets—good plants and bad plants. The good plants come from good seeds, and the bad plants from bad seeds. But the seeds are invisible. They sleep in the secrecy of the ground until one of them decides to wake up. Then it stretches and begins to sprout, quite timidly at first, a charming, harmless little twig reaching toward the sun. If it's a radish seed, or a rose-bush seed, you can let it sprout all it likes. But if it's the seed of a bad plant,

you must pull the plant up right away, as soon as
you can recognize it. As it happens, there were
terrible seeds on the little prince's planet . . . baobab
seeds. The planet's soil was infested with them. Now
if you attend to a baobab too late, you can never get
rid of it again. It overgrows the whole planet. Its roots
pierce right through. And if the planet is too small, and
if there are too many baobabs, they make it burst into
pieces.

"It's a question of discipline," the little prince told
me later on. "When you've finished washing and dressing
each morning, you must tend your planet. You must be
sure you pull up the baobabs regularly, as soon as you can
tell them apart from the rosebushes, which they closely
resemble when they're very young. It's very tedious work,
but very easy.

And one day he advised me to do my best to make a beautiful drawing, for the edification of the children where I live. "If they travel someday," he told me, "it could be useful to them. Sometimes there's no harm in postponing your work until later. But with baobabs, it's always a catastrophe. I knew one planet that was inhabited by a lazy man. He had neglected three bushes . . ."

So, following the little prince's instructions, I have drawn that planet. I don't much like assuming the tone of a moralist. But the danger of baobabs is so little recognized, and the risks run by anyone who might get lost on an asteroid are so considerable, that for once I am making an exception to my habitual reserve. I say, "Children, watch out for baobabs!" It's to warn my friends of a danger of which they, like myself, have long been unaware that I worked so hard on this drawing. The lesson I'm teaching is worth the trouble. You may be asking, "Why are there no other drawings in this book as big as the drawing of the baobabs?" There's a simple answer: I tried but I couldn't manage it. When I drew the baobabs, I was inspired by a sense of urgency.

VI

O LITTLE PRINCE! Gradually, this was how I came to understand your sad little life. For a long time your only entertainment was the pleasure of sunsets. I learned this new detail on the morning of the fourth day, when you told me:

The Baobabs

"I really like sunsets.
Let's go look at one now . . ."
"But we have to wait . . ."
"What for?"
"For the sun to set."

At first you seemed quite surprised, and then you laughed at yourself. And you said to me, "I think I'm still at home!"

Indeed. When it's noon in the United States, the sun, as everyone knows, is setting over France. If you could fly to France in one minute, you could watch the sunset. Unfortunately France is much too far. But on your tiny planet, all you had to do was move your chair a few feet. And you would watch the twilight whenever you wanted to. . . .

"One day I saw the sun set forty-four times!" And a little later you added, "You know, when you're feeling very sad, sunsets are wonderful . . ."

"On the day of the forty-four times, were you feeling very sad?"

But the little prince didn't answer.

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"What good are thorns?"

The little prince never let go of a question once he had asked it. I was annoyed by my jammed bolt, and I answered without thinking.

"Thorns are no good for anything—they're just the flowers' way of being mean!"

"Oh!" But after a silence, he lashed out at me, with a

Asteroids

Beyond the orbit of Mars are millions of chunks of rock and iron called asteroids. They all orbit the Sun in a region called the asteroid belt. The asteroid belt surrounds the terrestrial planets. The planets farther out are quite different from the terrestrial planets.

Some asteroids even have moons. When the spacecraft *Galileo* flew past asteroid Ida in 1993, scientists were surprised to discover it had a moon. They named it Dactyl. The largest object in the asteroid belt is Ceres, a dwarf planet. It is about 960 km around.
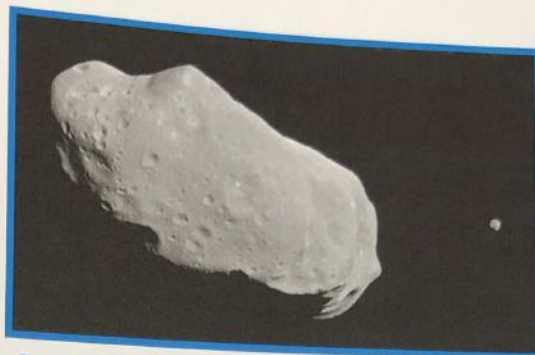
Asteroid Ida with moon Dactyl

Gas Giant Planets

The four planets farthest from the Sun are the gas giant planets. They do not have rocky surfaces like the terrestrial planets. So there is no place to land or walk around on them. They are much bigger than the terrestrial planets. What we have learned about the gas giant planets has come from probes on rockets sent out to fly by and orbit around the giants. Even though they are made of gases, each gas giant planet is different.

Neptune

Uranus

Saturn
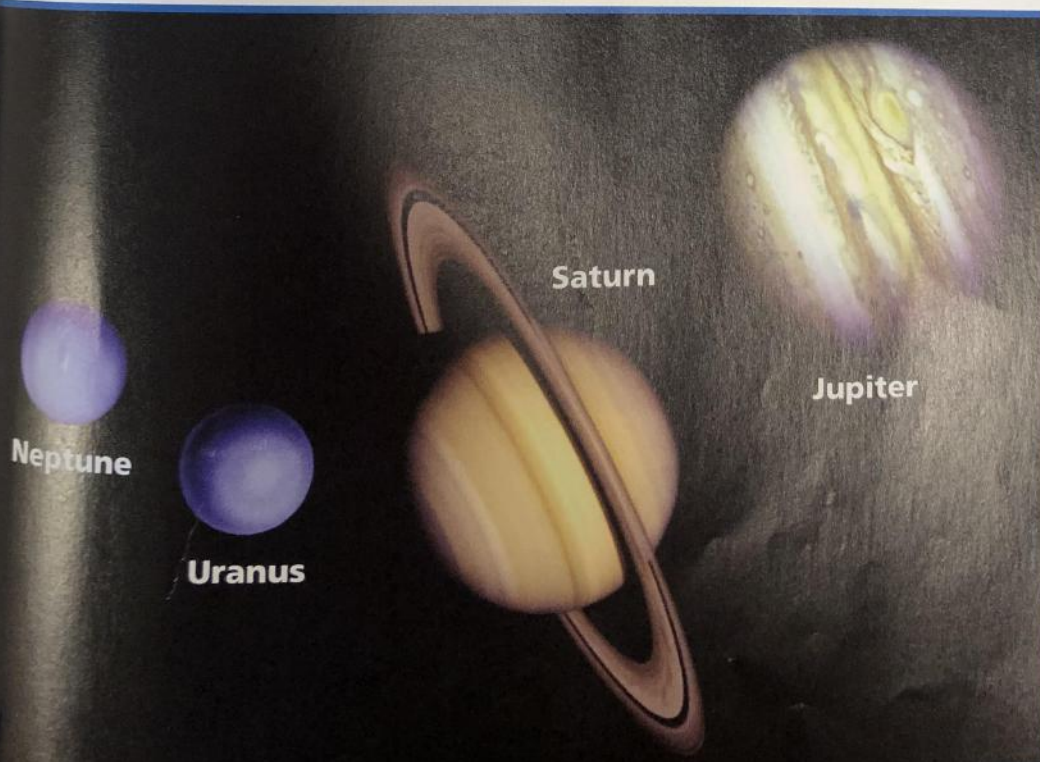
Jupiter

Relative sizes of the gas giant planets

151
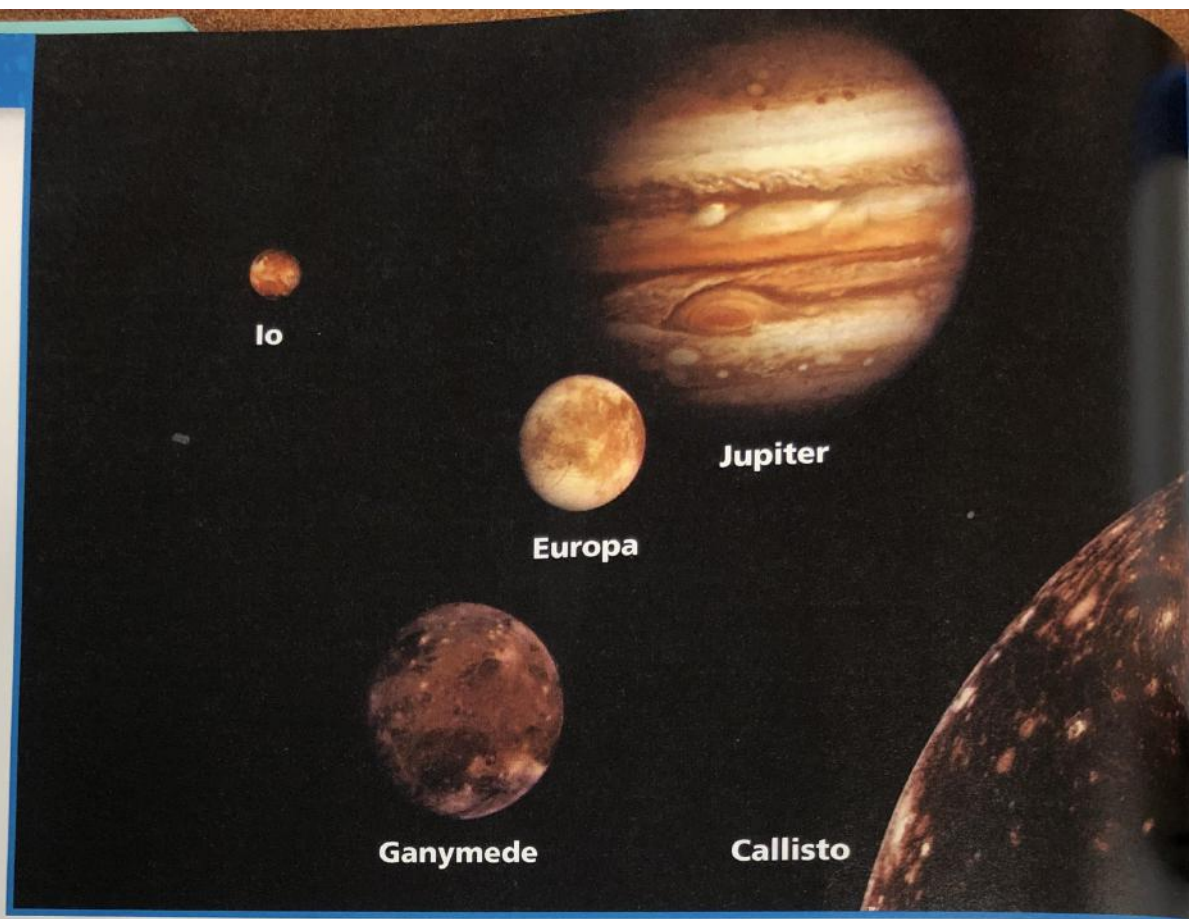
Jupiter and its four largest moons

Jupiter

Jupiter is the fifth planet from the Sun. It is the largest planet in the solar system. It is 11 times larger in diameter than Earth. Scientists have found 67 moons orbiting Jupiter. The four largest moons are Ganymede, Callisto, Io, and Europa.

Jupiter's atmosphere is cold and poisonous to life. It is mostly hydrogen and helium. Jupiter's stripes and swirls are cold, windy clouds of ammonia and water. Its Great Red Spot is a giant storm as wide as three Earths. This storm has been raging for hundreds of years. On Jupiter, the atmospheric pressure is so strong that it squishes gas into liquid. Jupiter's atmosphere could crush a metal spaceship like a paper cup.

An artist's drawing of Jupiter, its moon Io, and the *Galileo* spacecraft

152
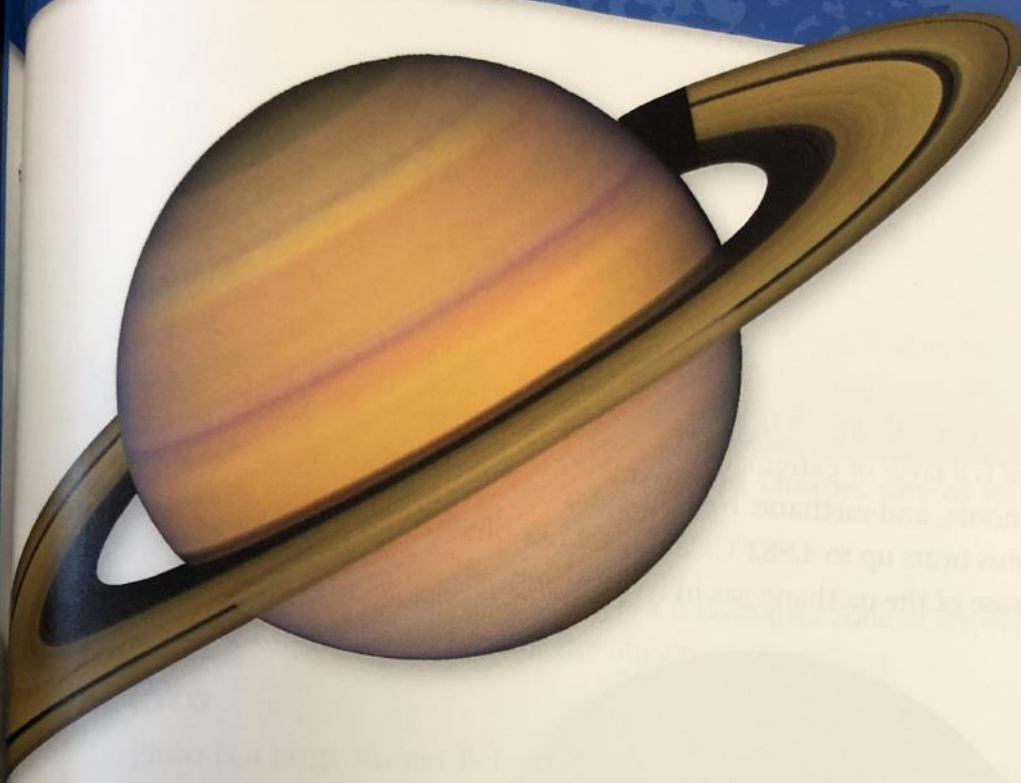
Saturn

Saturn is the sixth planet from the Sun. It is the second largest planet and is very cold. At least 62 satellites orbit Saturn. Most of the planet is made of hydrogen, helium, and methane. It doesn't have a solid surface.

It has clouds and storms like Jupiter, but they are harder to see because they move so fast. Winds in Saturn's upper atmosphere reach 1,825 km per hour.

The most dramatic feature of Saturn is its ring system. The largest ring reaches out 200,000 km from Saturn's surface. The rings are made of billions of small chunks of ice and rock. All the gas giant planets have rings, but they are not as spectacular as Saturn's.

Close-up of the rings of Saturn

153

Uranus

Uranus is the seventh planet from the Sun. Uranus has 27 moons and 11 rings. Uranus is very cold and windy, and would be poisonous to humans. It is smaller and colder than Saturn.

Uranus has clouds that are extremely cold at the top. Below the cloud tops, there is a layer of extremely hot water, ammonia, and methane. Near its center, Uranus heats up to 4,982°C. Uranus looks blue because of the methane gas in its atmosphere.

Neptune (right) and its largest moon, Triton

Neptune

Neptune is the eighth planet from the Sun. Neptune has 13 moons and 4 thin rings. It is the smallest of the gas giant planets, but is still much larger than the terrestrial planets.

Neptune is made mostly of hydrogen and helium with some methane. It may be the windiest planet in the solar system. Winds rip through the clouds at more than 2,000 km per hour. Scientists think there might be an ocean of super-hot water under Neptune's cold clouds. It does not boil away because of the atmospheric pressure.

154
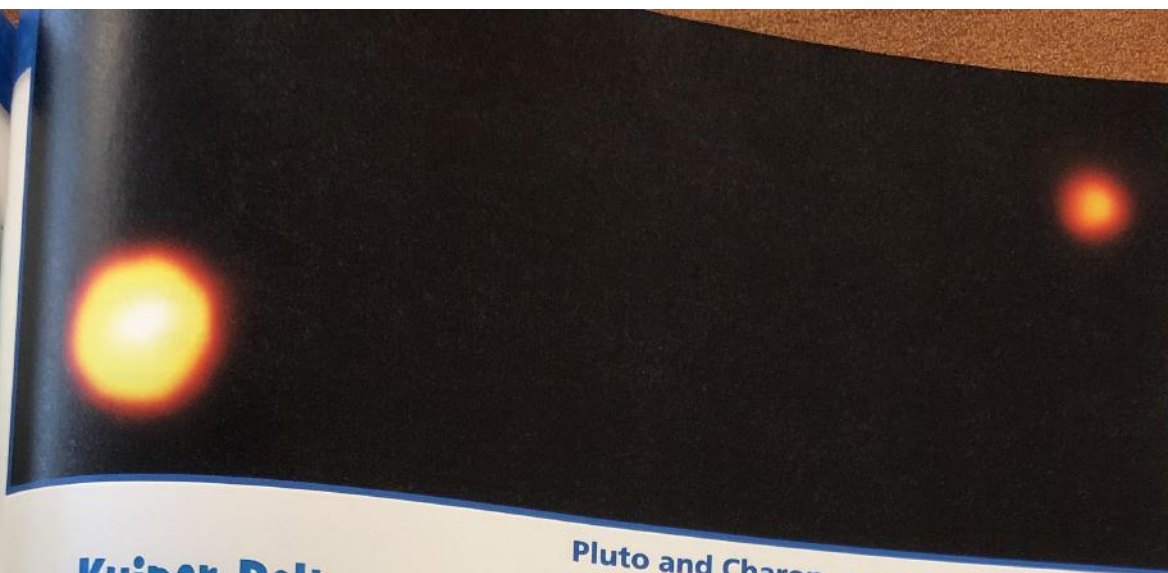
Pluto and Charon, one of its moons

Kuiper Belt

Out beyond the gas giant planets is a disk-shaped zone of icy objects called the Kuiper Belt. Some of the objects are fairly large.

Pluto

Pluto is a large Kuiper Belt object. Some scientists considered Pluto a planet because it is massive enough to form a sphere. Others did not consider Pluto a planet. To them, Pluto is one of the large pieces of debris in the Kuiper Belt. Scientists have agreed to call Pluto a dwarf planet.

Pluto has a thin atmosphere. When Pluto is farthest from the Sun, the atmosphere gets so cold that it freezes and falls to the surface. Even though Pluto is smaller than Earth's Moon, it has five moons. Charon is the largest (about half the size of Pluto). Nix and Hydra are much smaller. Even smaller moons named S/2011 P1 and S/2012 P1, were discovered in 2011 and 2012. And there may be more!

Eris

In July 2005, **astronomers** at the California Institute of Technology announced the discovery of a new planet-like object. It is called Eris. Like Pluto, Eris is a Kuiper Belt object and a dwarf planet. But Eris is more than twice as far away from the Sun as Pluto is. This picture is an artist's idea of what the Sun would look like from a position close to Eris.

The Sun would look like a bright star from Eris.

155

Comets

Comets are big chunks of ice, rock, and gas. Sometimes comets are compared to dirty snowballs. Scientists think comets might have valuable information about the origins of the solar system.

Comets orbit the Sun in long, oval paths. Most of them travel way beyond the orbit of Pluto. A comet's trip around the Sun can take hundreds or even millions of years, depending on its orbit. A comet's tail shows up as it nears the Sun and begins to warm. The gases and dust that form the comet's tail always point away from the Sun.
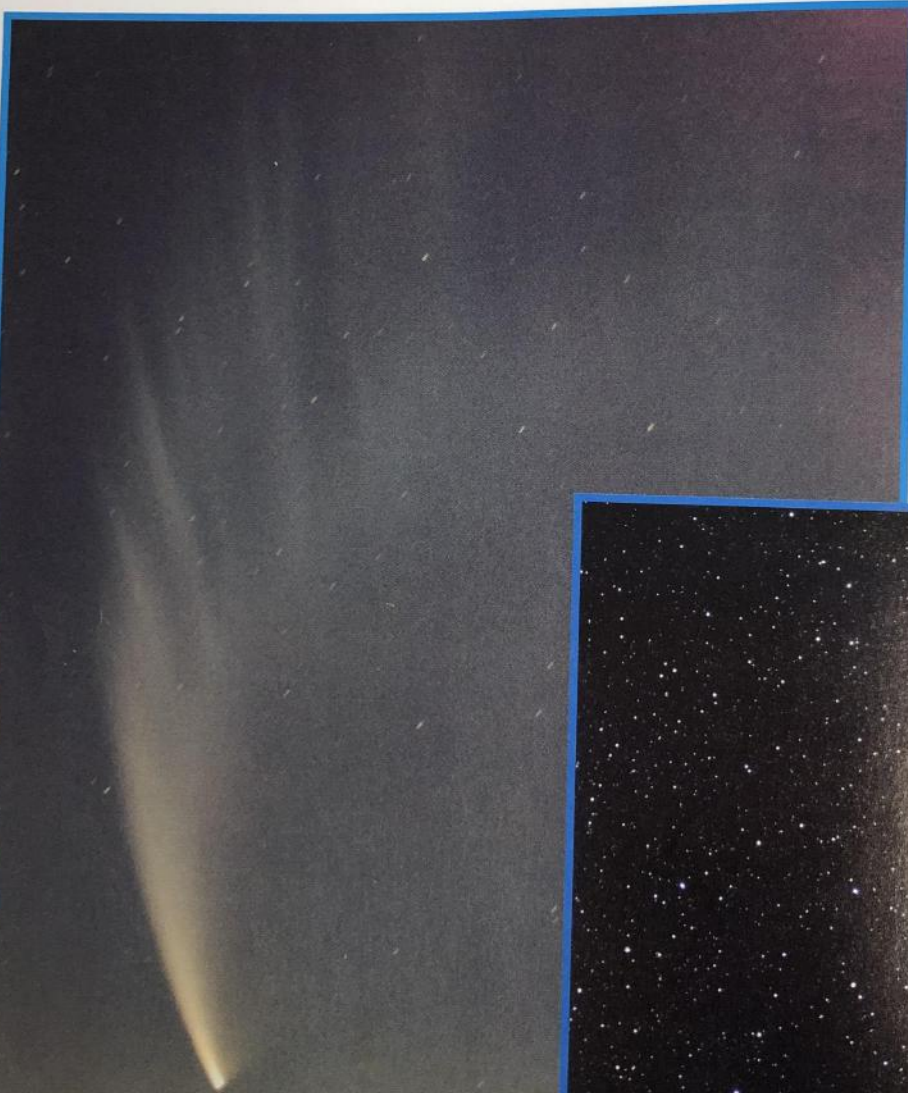
A comet's tail always points away from the Sun.

156

Comet orbits can cross planet orbits. In July 1994, a large comet, named Comet Shoemaker-Levy 9, was on a collision course with Jupiter. As it got close to Jupiter, the comet broke into 21 pieces. The pieces slammed into Jupiter for a week. Each impact created a crater larger than Earth.
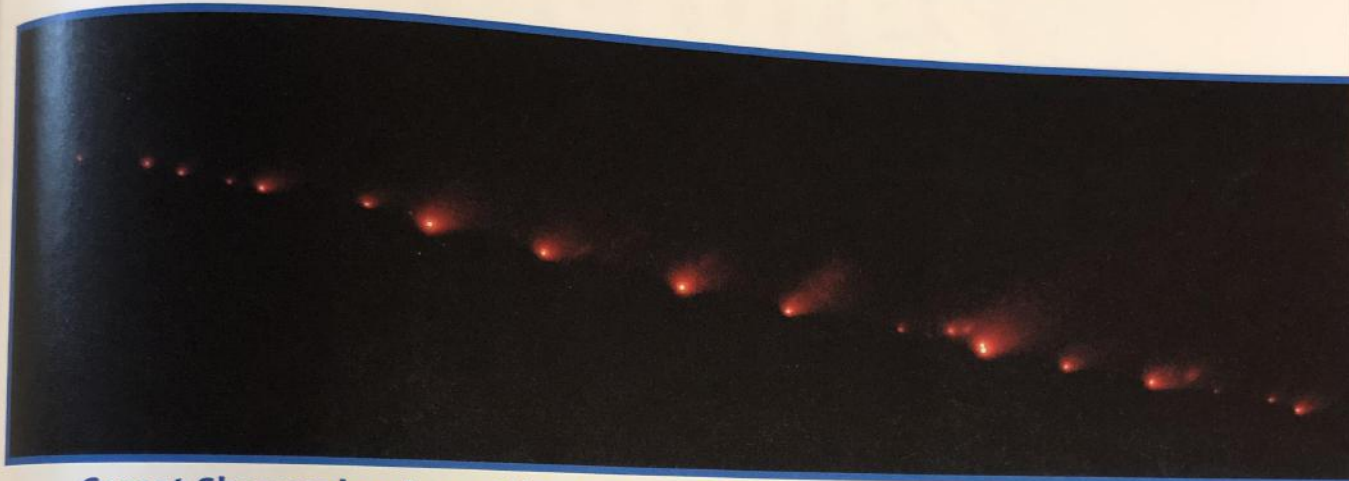
Comet Shoemaker-Levy 9 broke into 21 pieces as it got close to Jupiter.

Two of the comet's craters on Jupiter. The picture of Earth gives an idea of how big the craters are.

Review Questions

1. What is the Sun, and what is it made of?

2. What is the solar system?

3. Name the planets in order of their distance from the Sun.

4. Which planets are terrestrial planets? Which planets are gas giant planets?

157

Thursday

GHNO | 3rd Grade | Week 7 | 05/07

"One day I saw the sun set forty-four times!" And a little later you added, "You know, when you're feeling very sad, sunsets are wonderful . . ."

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"Thorns are no good for anything—they're just the flowers' way of being mean!"

"Oh!" But after a silence, he lashed out at me, with a

sort of bitterness. "I don't believe you! Flowers are weak. They're naive. They reassure themselves whatever way they can. They believe their thorns make them frightening . . ."

I made no answer. At that moment I was thinking, *If this bolt stays jammed, I'll knock it off with the hammer.* Again the little prince disturbed my reflections.

"Then you think flowers . . ."

"No, not at all. I don't think anything! I just said whatever came into my head. I'm busy here with something serious!"

He stared at me, astounded.

"'Something serious'!"

He saw me holding my hammer, my fingers black with grease, bending over an object he regarded as very ugly.

"You talk like the grown-ups!"

That made me a little ashamed. But he added, mercilessly:

"You confuse everything . . . You've got it all mixed up!" He was really very annoyed. He tossed his golden curls in the wind. "I know a planet inhabited by a red-faced gentleman. He's never smelled a flower. He's never looked at a star. He's never loved anyone. He's never done anything except add up numbers. And all day long he says over and over, just like you, 'I'm a serious man! I'm a serious man!' And that puffs him up with pride. But he's not a man at all—he's a mushroom!"

"He's a what?"

"A mushroom!" The little prince was now quite pale with rage. "For millions of years flowers have been pro-

ducing thorns. For millions of years sheep have been eating them all the same. And it's not serious, trying to understand why flowers go to such trouble to produce thorns that are good for nothing? It's not important, the war between the sheep and the flowers? It's no more serious and more important than the numbers that fat red gentleman is adding up? Suppose I happen to know a unique flower, one that exists nowhere in the world except on my planet, one that a little sheep can wipe out in a single bite one morning, just like that, without even realizing what he's doing—that isn't important?" His face turned red now, and he went on. "If someone loves a flower of which just one example exists among all the millions and millions of stars, that's enough to make him happy when he looks at the stars. He tells himself, 'My flower's up there somewhere . . .' But if the sheep eats the flower, then for him it's as if, suddenly, all the stars went out. And that isn't important?"

He couldn't say another word. All of a sudden he burst out sobbing. Night had fallen. I dropped my tools. What did I care about my hammer, about my bolt, about thirst and death? There was, on one star, on one planet, on mine, the Earth, a little prince to be consoled! I took him in my arms. I rocked him. I told him, "The flower you love is not in danger . . . I'll draw you a muzzle for your sheep . . . I'll draw you a fence for your flower . . . I . . ." I didn't know what to say. How clumsy I felt! I didn't know how to reach him, where to find him. . . . It's so mysterious, the land of tears.

VIII

I SOON LEARNED to know that flower better. On the little prince's planet, there had always been very simple flowers, decorated with a single row of petals so that they took up no room at all and got in no one's way. They would appear one morning in the grass, and would fade by nightfall. But this one had grown from a seed brought from who knows where, and the little prince had kept a close watch over a sprout that was not like any of the others. It might have been a new kind of baobab. But the sprout soon stopped growing and began to show signs of blossoming. The little prince, who had watched the development of an enormous bud, realized that some sort of miraculous apparition would emerge from it, but the flower continued her beauty preparations in the shelter of her green chamber, selecting her colors with the greatest care and dressing quite deliberately, adjusting her petals one by one. She had no desire to emerge all rumpled, like the poppies. She wished to appear only in the full radiance of her beauty. Oh yes, she was quite vain! And her mysterious adornment had lasted days and days. And then one morning, precisely at sunrise, she showed herself.

And after having labored so painstakingly, she yawned and said, "Ah! I'm hardly awake . . . Forgive me . . . I'm still all untidy . . ."
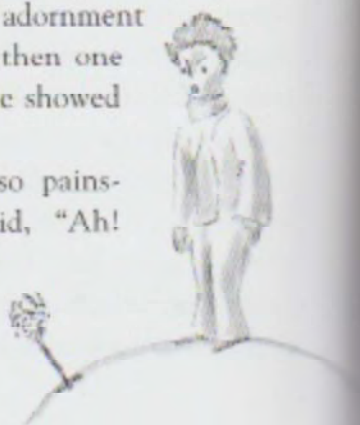
But the little prince couldn't contain his admiration.

"How lovely you are!"

"Aren't I?" the flower answered sweetly. "And I was born the same time as the sun . . ."

The little prince realized that she wasn't any too modest, but she was so dazzling!

"I believe it is breakfast time," she had soon added. "Would you be so kind as to tend to me?"

And the little prince, utterly abashed, having gone to look for a watering can, served the flower.

SHE HAD SOON begun tormenting him with her rather touchy vanity. One day, for instance, alluding to her four thorns, she remarked to the little prince, "I'm ready for tigers, with all their claws!"
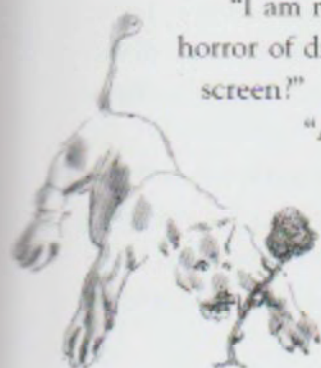
"There are no tigers on my planet," the little prince had objected, "and besides, tigers don't eat weeds."

"I am not a weed," the flower sweetly replied.

"Forgive me . . ."

"I am not at all afraid of tigers, but I have a horror of drafts. You wouldn't happen to have a screen?"

"A horror of drafts . . . that's not a good sign, for a plant," the little prince had observed. "How complicated this flower is . . ."

23

"After dark you will put me under glass. How cold it is where you live—quite uncomfortable. Where I come from—" But she suddenly broke off. She had come here as a seed. She couldn't have known anything of other worlds. Humiliated at having let herself be caught on the verge of so naive a lie, she coughed two or three times in order to put the little prince in the wrong. "That screen?"

"I was going to look for one, but you were speaking to me!"

Then she made herself cough again, in order to inflict a twinge of remorse on him all the same.

So THE LITTLE PRINCE, despite all the goodwill of his love, had soon come to mistrust her. He had taken seriously certain inconsequential remarks and had grown very unhappy.

"I shouldn't have listened to her," he confided to me one day. "You must never listen to flowers. You must look at them and smell them. Mine perfumed my planet, but I didn't know how to enjoy that. The business about the tiger claws, instead of annoying me, ought to have moved me . . ."

And he confided further, "In those days, I didn't understand anything. I should have judged her according to her actions, not her words. She perfumed my planet and lit up my life. I should never have run away! I ought to

have realized the tenderness underlying her silly preten-
sions. Flowers are so contradictory! But I was too young
to know how to love her."

IX

IN ORDER TO make his escape, I believe he took ad-
vantage of a migration of wild birds. On the morning of
his departure, he put his planet in order. He carefully
raked out his active volcanoes. The little prince pos-
sessed two active volcanoes, which were very conve-
nient for warming his breakfast. He also possessed one
extinct volcano. But, as he said, "You never know!"
So he raked out the extinct volcano, too. If they are
properly raked out, volcanoes burn gently and regularly,
without eruptions. Volcanic eruptions are like fires in a
chimney. Of course, on our Earth we are much too small
to rake out our volcanoes. That is why they cause us so
much trouble.

The little prince also uprooted, a little sadly, the last
baobab shoots. He believed he would never be coming
back. But all these familiar tasks seemed very sweet to
him on this last morning. And when he watered the
flower one last time, and put her under glass, he felt like
crying.

"Good-bye," he said to the flower.
But she did not answer him.
"Good-bye," he repeated.
The flower coughed. But not
because she had a cold.

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