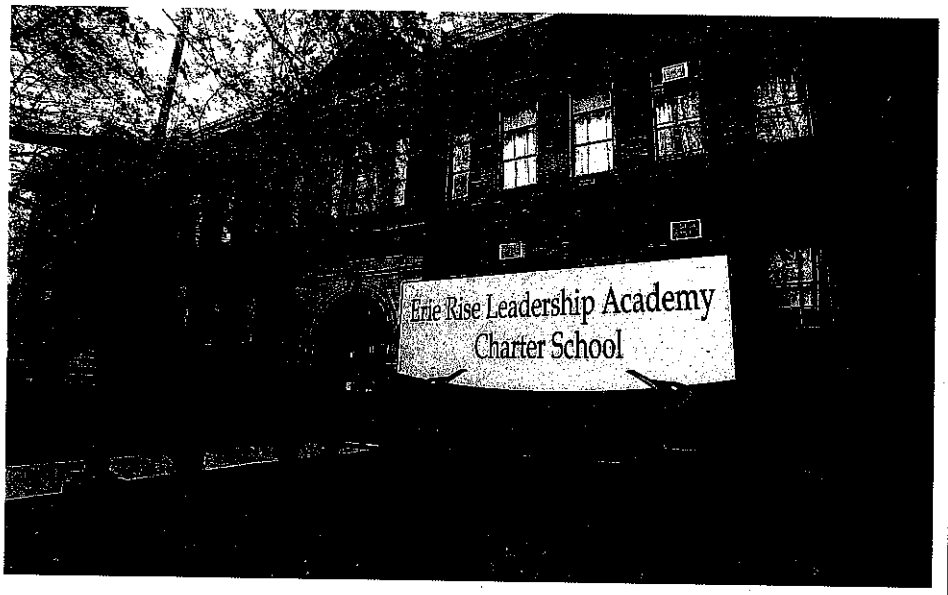


PLANNED INSTRUCTION LESSON MATERIALS

4th Grade: Mrs. Barger/Mrs. Carman

DUE DATE: FRIDAY, MAY 15TH

Please complete the following materials by the due date noted above.

Completed materials may be dropped off at the school (1006 West 10th Street) during food distribution Tuesdays and Fridays from 10:00am – 12:00noon, or turned in when the next week's materials are delivered to your home.

If you need assistance in completing the attached materials, please reach out to your classroom teacher via email, the school's website or Facebook page, or Class Dojo. You may also call the school directly Monday – Friday from 9:00am – 11:00am at 814-520-6468

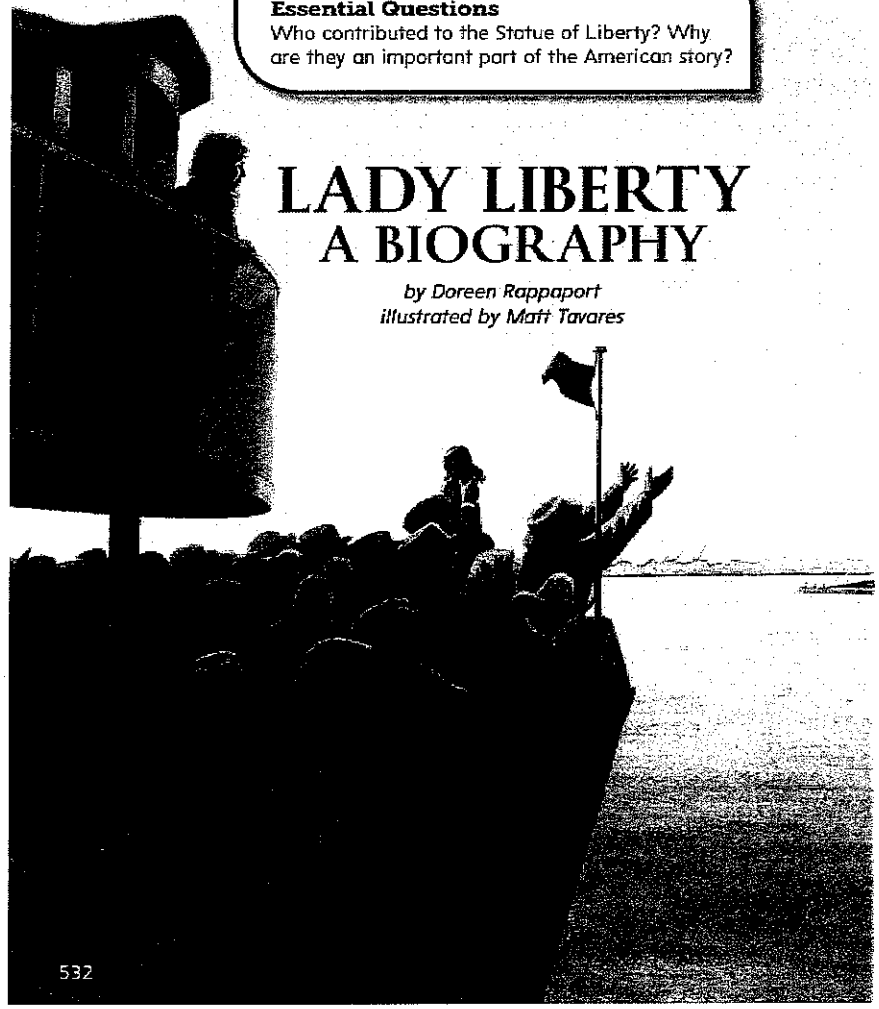
Mrs. Veronica Will, Principal 814 873-5158

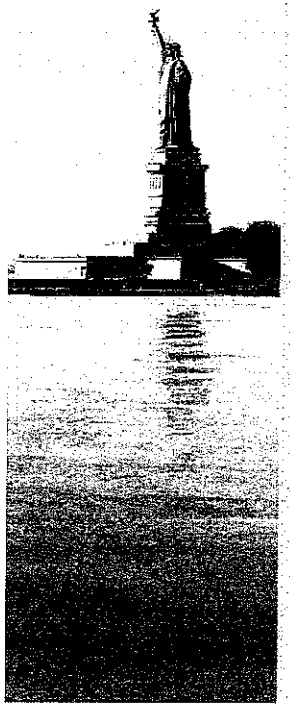
Mr. Aubrey Favors, Interim CEO 814 812-3026

Genre Narrative Nonfiction
Essential Questions
Who contributed to the Statue of Liberty? Why are they an important part of the American story?

LADY LIBERTY
A BIOGRAPHY

by Doreen Rappaport
illustrated by Matt Tavares





DOREEN RAPPAPORT

New York City, Today

One hundred twenty years ago,
my grandfather fled his home in Latvia,
thousands of miles away.
He left his mother and father and
brothers and sisters and
aunts and uncles and cousins
to come to a country where he knew no one.
He came to build a better life.

As the ferry nears the Statue of Liberty,
I try to imagine his ocean journey and
how he felt when he saw her for the first time.

He was on a ship packed with people
from many different countries,
speaking languages he did not understand.
For days the ocean bucked and roared.
He slept in steerage with others who had no money,
longing for fresh air.
Most days his stomach hurt too much to eat.

Then early one morning, shouts of
"The Lady! The Lady!" awakened him.
He raced up to the deck.
The ship was pulling into New York,
and there was Lady Liberty greeting them all.

Arms reached out as if to caress her.
People lifted babies so they could see her.
Tears ran down my grandfather's face.
People around him were crying, too.
And then a wave of cheering and hugging
swept over the ship.

I wonder if my grandfather ever thought
about how she came to be.

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ÉDOUARD DE LABOU[illegible]YE

Professor of Law
Glatigny, France. 1865

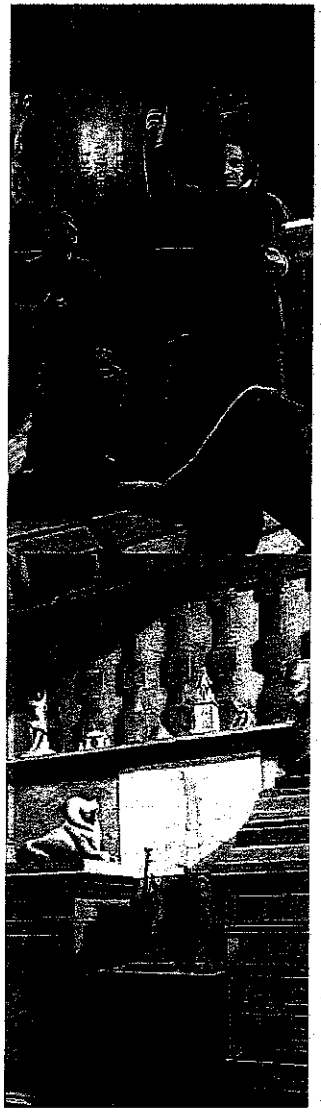
It is a warm summer night.
After dinner, we move into the parlor.
The talk turns to our dear friend, America.

We speak of how the Marquis de Lafayette
fought side by side with George Washington.
Ever the historian, Henri Martin reminds us
that the Americans would not have won
the final battle at Yorktown
without Count de Grasse's navy
and Rochambeau's soldiers.
Our countrymen died for America's freedom.

The American Revolution fired our revolution.
Their Declaration of Independence inspired our
Declaration of the Rights of Man and of the Citizen.
I often tell my own students that the
American Constitution is a model for the world.

Soon America will be one hundred years old.
I share my dream of a birthday gift.
Auguste Bartholdi listens intently when
I suggest a monument from our people to theirs
to celebrate their one hundred years of independence
and to honor one hundred years of friendship
between our countries.

Henri says such a gift is not possible now.
Emperor Napoleon III rules France.
This dictator would not allow such a gift.
I will wait for things to change, I say.
I will not give up my dream.



AUGUSTE BARTHOLI

Sculptor
40 rue Vavin, Paris, France, 1875

Laboulaye's dream has become my dream, too.
Now after ten years of dreaming,
we can make it come true—
Napoleon III rules France no more.

I went across the sea to America to share the dream.
Laboulaye gave me letters of introduction.
I met many famous people,
including President Ulysses S. Grant.
Everyone was polite and seemed interested.
But no one offered to raise money to build her.
I am not worried.
We will raise the money in France.

Everything in America is so big.
The mighty Niagara Falls pounds liquid thunder.
Tall grasses stretch across a never-ending prairie.
Jagged peaks soar in the Rocky Mountains.
California's giant redwoods cover the sky.
In this New World of colossal natural wonders,
I found the perfect place for her.
She will rise on an island in New York's harbor,
welcoming everyone to America.

I have sketched Liberty many times
and made clay models.
Laboulaye helped me at every stage.
She will be massive but elegant,
as grand as any one of the
Seven Wonders of the Ancient World.
Liberty will rival the Great Pyramid of Egypt,
and the gold and ivory statue of Zeus at Olympia,
and the colossus of Helios in Rhodes.

MARIE SIMON

Bartholdi's Assistant
25 rue de Chazelles, Paris, France, 1876

After months of work,
we have finished the right arm and torch.
Now we start on the left hand.
We go back to Bartholdi's four-foot clay model.

The pointers measure her forearm, wrist,
fingers, nails, and tablet.
They multiply each part by two
to build a model twice as big.

Again, they measure and multiply,
this time by four.
Slowly. Carefully. Section by section,
the workers build a bigger model.
Bartholdi moves about like a prowling tiger,
reminding everyone to be precise.

Again, measure and multiply by four.
This third model pleases Bartholdi.
The workers divide it into twenty-one parts.
Each part will be enlarged another four times.

Now the carpenters begin.
Day in, day out, buzzing and sawing.
Wood chips and sawdust litter the floor.
Narrow wooden strips are bent and
nailed together to form the giant molds.
Some wood is carved to make softer lines.

White dust clings to the workers
as they pour plaster over the wood
until the shapes are just right.
Bartholdi waits impatiently
for the plaster to harden.

New wooden molds have been set on laster.
Now the coppersmiths begin their work.

"I will not cast her like ancient statues
from bronze cannons taken from enemies,"
Bartholdi says.
"She will be of pure copper,
made by workers in an era of peace."

Liberty's copper skin will not rust
in the salt air of the New York harbor.
Copper is light and easy to work.
It bends without cracking.

Day in, day out, rapping and banging,
as the copper is pounded on the molds
until the shapes are perfect.
Bartholdi stalks about the studio
from station to station,
hurrying the workers along,
oblivious to the noise.

Finally the hollow copper shells
are lifted off the wooden molds.
Now it is Eiffel's turn.
He must make sure Liberty stands tall.

GUSTAVE EIFFEL

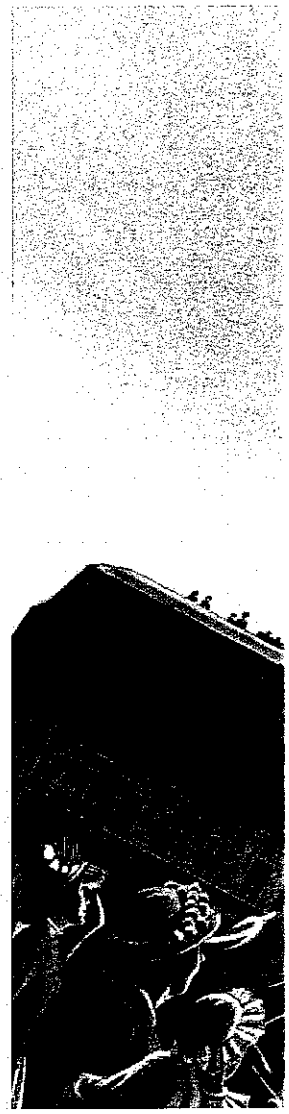
Structural Engineer
25 rue de Chazelles, Paris, France, 1883

Lady Liberty is the talk of Paris.
Every day hundreds of people come
to watch her grow.

To keep Liberty upright is a challenge
as great as any I have faced in building bridges.
Her copper shell weighs more than 179,000 pounds.
So I made her a skeleton—
a ninety-six-foot-high iron tower
of beams and ribs
upon which to bolt her copper skin.

Iron rusts when it touches copper.
Some say my brilliance is having
the beams pass through fittings
so the iron does not fasten directly to the copper.
The fittings also let her copper skin move,
to expand and contract with the weather.

I listen to the people talk as they watch
her skin being riveted onto her skeleton.
She inspires them. She inspires me.
Liberté, égalité, and *fraternité* are in the air.



EMMA LAZARUS

Poet
New York City, November 1883

A gala auction is being held
to raise money for Liberty's pedestal.
Famous artists are donating paintings.
I was asked to write a poem
to be sold along with poems
by Longfellow and Whitman.
It is a great honor to be asked.
I can write about anything I want.
But I have had trouble writing lately
because I feel too sad.

In the past few years in Russia,
hundreds of Jews have been killed.
Thousands have been persecuted,
their homes burned, their shops destroyed.
They trek hundreds of miles across Europe
with only the clothes on their backs,
hoping to find ships to take them to America.

We Jews are not new to hatred.
Almost two hundred years ago
my ancestors fled Europe, too.
America was a land of hope for them.
It is still a land of hope.

Soon when people arrive in the New World,
they will be welcomed
by a caring, powerful woman.

Give me your tired, your poor,
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore.
Send these, the homeless, tempest-tost to me:
I lift my lamp beside the golden door!

CHARLES P. STONE

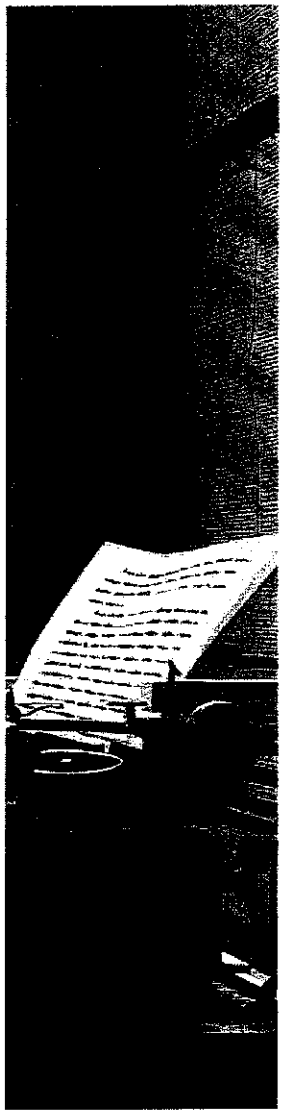
Construction Supervisor
Bedloe's Island, March 1884

Sweat and grime cover the workers' bodies.
Their muscles bulge from months of digging.
They grunt and call out to one another
in words foreign to my ears
as they hack away with pickaxes
at old cisterns and stone walls,
until the hole is thirteen feet deep
and ninety-one feet square.

They mix and pour cement and sand
and large and small stones
to fill the huge hole.
They pour more concrete on top,
27,000 tons in all, until the foundation
rises sixty-five feet from the ground.
They test each layer to be sure
it is hard before they pour again.

Over and over, sixteen hours a day,
their rhythms never change,
only the weather.
Every part of their bodies aches,
but no one complains.
There were no jobs in their villages
in Italy.

When the sun goes down, they eat,
then stumble off to sleep
in makeshift tents on the island.
But I believe they are content, for
they are building new lives in this country.



JOSEPH PULITZER

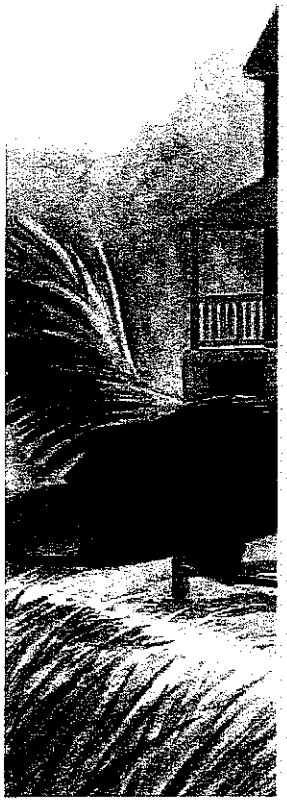
Publisher, New York World
New York City, March 1885

More than one hundred thousand French people—
shopkeepers, artisans, farmers, and children—
gave their hard-earned money to build Liberty.
Americans have been giving money, too.
One hundred thousand dollars is still needed
to build her pedestal.
Some Americans criticize the French
for not giving *all* the money, since it is a gift.
I read with disgust newspaper editorials
mocking their generosity.

Some people call Liberty a "national disgrace."
Others call her "New York's lighthouse."
The mayor of New York City does not want her.
Congress has refused to give money for her pedestal.
I cannot understand why politicians do not understand
her power as a symbol of freedom.

I say she belongs in New York City.
New York is the gateway to the New World,
the door of hope for immigrants.
I know.
I landed here penniless twenty-one years ago.

We have more than a hundred millionaires in this city
who could write a check for the full amount.
But no one has.
I shall ask my readers to help.
They are not millionaires,
but I know *they* will care,
for they will understand her importance.



FLORENCE DE FOREI

Metuchen, New Jersey, June 1885

Mr. Pulitzer's campaign is working.
More than one hundred thousand
Americans have given
pennies, nickels, dimes, and dollars.
When you send money,
Mr. Pulitzer prints your name
and how much you gave in his paper.

I am sending my two pet roosters.
Mr. Pulitzer can sell them and
use the money for the pedestal.
I can't wait to see my name in print.

People as far away as Texas have sent money—
soldiers, factory workers, miners, bank tellers,
actors, doctors, farmers, shopkeepers.
Even gamblers have given money.
The most money has come from
veterans of the Civil War.
They gave fifteen hundred dollars.

Two boys sent a dollar that
they had saved for circus tickets.
Another boy sent twenty-five pennies.

Mr. Pulitzer pokes fun
at the rich people who don't give.
He calls them "croakers" and "laggards"
and prints their names in his paper, too!

JOSEPH PULITZER

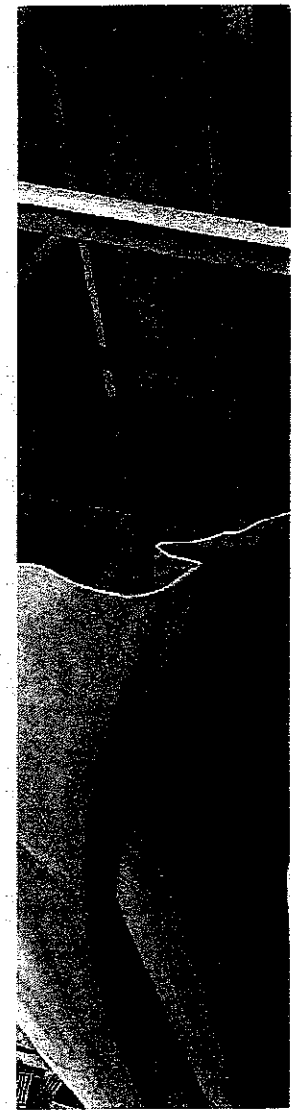
Publisher, New York World
New York City, August 1886

Liberty's skeleton is now anchored
to the pedestal,
bolted to huge girders
that protrude from the concrete.
Eighty-nine feet tall, twenty feet thick,
and faced with granite,
the pedestal is more majestic than I had hoped.
I am humbled by my readers' generosity.
Many who have so little gave so much
to build this noble structure.

Liberty arrived in 214 crates.
On her trip across the ocean,
vicious storms buffeted the ship.
Labels fell off crates.
Pieces of her copper skin were shaken.
Many need to be reshaped.

Slowly each copper sheet
is hoisted up with heavy ropes.
The workers sit on the crossbars,
fitting her copper skin to the skeleton.
When one piece doesn't fit,
they haul up another and try it,
then another,
until they find the right one.
The first piece of copper skin attached
to the skeleton is named "Bartholdi."
The second piece is christened "Pulitzer."

Each day she grows more beautiful.
I predict that those who once mocked her
will soon love her and understand
her power and significance.



JOSÉ MARTÍ

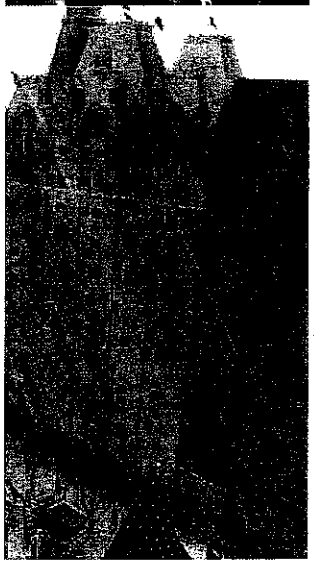
Journalist, Poet
New York City, October 28, 1886

Today is Liberty's day.
Up and down the Hudson River,
French and American flags stretch
from mast to mast, from bow to stern,
on hundreds of tugboats and yachts and
scows and steamers and ships-of-war.

Rain is falling, but no one cares.
The red, white, and blue of the Stars and Stripes
and the French tricolors fly
from buildings and stores and arches.
Sidewalks, doorways, windowsills, and roofs
bulge with people.
Adults stand on wooden boxes and scaffolding.
A million Americans have come to welcome her.

Grand Marshal Charles Stone,
astride a black horse, leads
five miles of red, gray, blue, and green.
Regiment after regiment.
Soldiers and sailors, young and old,
march in lockstep.
Eyes front, chests out, arms swinging.
Left, right, left, right.
Legs strut and splash themselves.

The militias dip their colors in tribute
at Pulitzer's building and the viewing stand.
The Rochambeau grenadiers raise
their glistening swords to their lips.
President Grover Cleveland salutes
the bullet-torn flags of past wars.
"Bartholdi! Bartholdi!" people cry
as they see him on the viewing stand.
Three girls race up to give him flowers.



Children in school uniforms,
heavy-footed policemen with shiny brass buttons,
firemen decked out in red shirts
alongside their horse-drawn steam engines,
cheering, "Hi-yi-yi-hi."
Navy men with big white hats.
Zouaves with fire-red pants.
Soldiers wounded in past wars ride
in carriages with judges and governors.

And the marching bands,
so many, all playing at once.
O say can you see . . .
Arise, ye sons of France, to glory . . .
I wish I was in the land of cotton . . .
I'm a Yankee Doodle Dandy . . .
A din of drums and horns and tubas.

Finally, General Washington's carriage,
drawn by eight dappled gray horses.
Yays and hoorays for the Continental Guards.
The city is one vast cheer.

Liberty! The most important word in the world.
I know that all too well.
I was deported from my country, Cuba,
for fighting to free my people from Spanish rule.

AUGUSTE BARTHOLI

Sculptor
Bedloe's Island, October 28, 1886

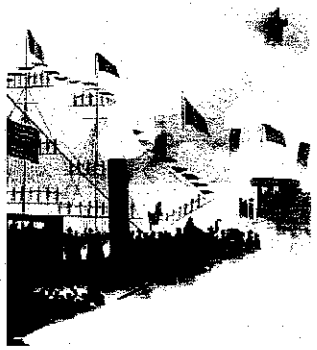
Liberty's face is hidden beneath our tricolors.
I see easily through to her magnificence.

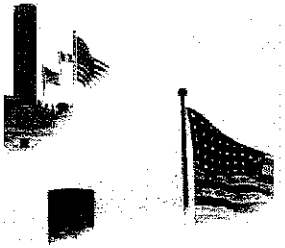
I wend my way through the crowd
to climb up to Liberty's crown.
Surrounded by her beams and ribs,
I mount the 354 steps, remembering
the hundreds of thousands of people—
French and American—
who helped realize my dream.
If only Laboulaye were alive to see her.

I crouch to look through her windows.
I wave to the boy below who will signal me
at just the right moment.
Tugboat whistles and trumpet fanfares
clash in the damp air.
Cannons fire deafening salutes.

Finally quiet. A blessing.
One speech. A second speech.
I cannot hear anything over
the shrieking tugboats.

The boy waves his hand.
At last, it is time.
I loosen the cord holding the tricolors
over Liberty's face.





The flag falls.
Lady Liberty is visible in all her glory.
Cheering and shouting rip the air.
Roaring cannons, belching foghorns,
drumrolls, trumpet flourishes.
Arise, ye sons of France, to glory . . .
O say can you see . . .

Every part of her shouts freedom.
In one hand she holds a tablet,
engraved with July 4, 1776.
In her other hand she holds a torch.
These flames do not destroy.
Mon Américaine does not conquer with weapons.
True liberty triumphs through Truth and Justice and Law.

She wears a flowing robe
like the ancient goddess *Libertas*.
Her right foot is raised.
Liberty walks.
Freedom never stands still.
A broken shackle and chain lie near her feet.
America broke the links of slavery
to fulfill its promise of equality for all.

President Cleveland steps forward.
The crowd quiets.
"We will not forget that Liberty
has made her home here," he says.

More cheering and shouting.
On and on, a glorious explosion of noise.
Like a hundred Bastille Day celebrations.

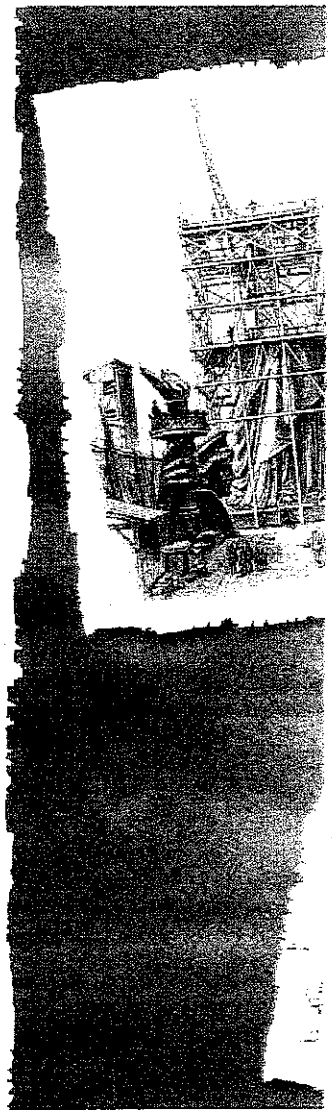
I feel perfect happiness.
This symbol of unity and friendship
between two great republics will last forever.
It has taken more than twenty years, but
the dream of my life is accomplished.

Essential Question
What does the Statue of Liberty represent?

The New Colossus

by Emma Lazarus

Not like the brazen giant of Greek fame,
With conquering limbs astride from land to land;
Here at our sea-washed, sunset gates shall stand
A mighty woman with a torch, whose flame
Is the imprisoned lightning, and her name
Mother of Exiles. From her beacon-hand
Glows world-wide welcome; her mild eyes command
The air-bridged harbor that twin cities frame.
"Keep, ancient lands, your storied pomp!" cries she
With silent lips. "Give me your tired, your poor,
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore.
Send these, the homeless, tempest-tost to me,
I lift my lamp beside the golden door!"



LESSON 5

National Treasures

Use the different sections of this letter to begin conversations with your child about what he or she is learning.

Big Idea: What makes a national treasure?

Ask your child how this week's reading selection helps him or her answer this question.

This week's reading selection: *Lady Liberty: A Biography*

Summary: Told through the eyes of those responsible for her creation, this poetic narrative describes the story of what began as a gesture of gratitude from France. The historic landmark stands in New York Harbor as a symbol of freedom welcoming those who come seeking liberty and hope.

▶ **DISCUSS** with your child why the Statue of Liberty is considered a national treasure.

Vocabulary

Have your child make flashcards to practice reading and defining these words.

steerage	*noun*	a section in a passenger ship where passengers with the cheapest tickets would stay
monument	*noun*	a building, statue, or other object made to honor a person or event
dictator	*noun*	a person who rules a country without sharing power or consulting anyone else
colossal	*adjective*	of great size
precise	*adjective*	definite; exact
oblivious	*adjective*	not conscious or aware of someone or something
gala	*noun*	a festive occasion; celebration
auction	*noun*	a public sale at which things are sold to the person who offers the most money
makeshift	*adjective*	used for a time in place of the correct or usual thing
veterans	*noun*	people who have been in the armed forces
protrude	*verb*	to stick out
accomplished	*verb*	did something successfully; completed

Spelling

Practice these words with your child.

1. bipeds
2. deflect
3. dislocate
4. expedite
5. impede
6. local
7. locate
8. location
9. locomotive
10. millipede
11. peddler
12. pedestal
13. pedestrian
14. pedigree
15. pedometer
16. reflect
17. reflection
18. reflective
19. reflector
20. relocate

Challenge

1. allocate
2. echolocation
3. expedition

Language Arts

Writing: Your child will use a previously-read fiction selection as the topic of a response to literature paragraph.

Grammar: Your child will learn about homophones and practice using correct homophones in sentences.

▶ **WRITE** the following pairs of homophones: *right, write; sent, cent; whole, hole.* Then have your child generate a sentence for each word that shows the correct use of the word.

Fact or Opinion Quiz

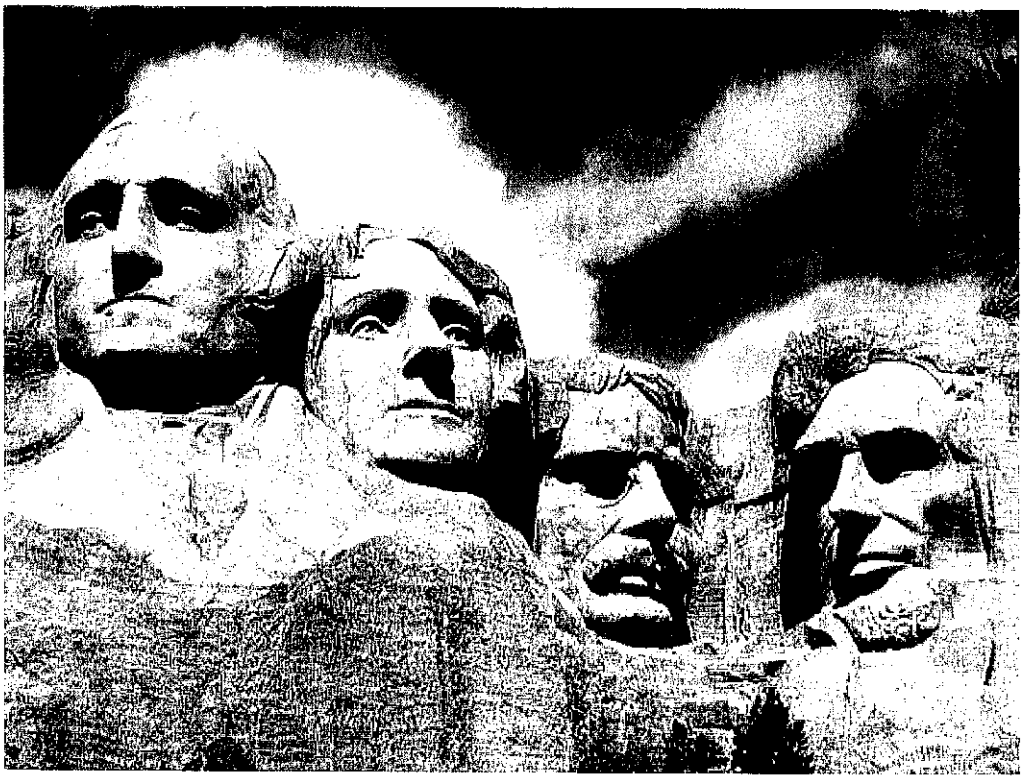
Fact or Opinion Quiz
Read each sentence and choose whether it states a fact or an opinion.

* Required

What is your name? *

Your answer

Mount Rushmore



1. Mount Rushmore National Museum is located in the Black Hills of South Dakota. 1 point

- ◯ Fact
- ◯ Opinion

2. This famous monument is a lot smaller than I pictured it. 1 point

- ◯ Fact
- ◯ Opinion

3. The faces of George Washington, Thomas Jefferson, Theodore Roosevelt, and Abraham Lincoln are carved in granite. 1 point

- ◯ Fact
- ◯ Opinion

4. The sculptures are around sixty feet tall. 1 point

- ◯ Fact
- ◯ Opinion

5. Construction of Mount Rushmore began in 1927 and ended in 1941. 1 point

- ◯ Fact
- ◯ Opinion

Submit

Blank Quiz

Latin roots flect, ped, and loc

* Required

What is your name? *

Your answer

High waves are an _____ to sailing. 1 point

- ◯ impediment
- ◯ implement

Let's _____ the lawnmower from the garage to the storage shed. 1 point

- ◯ relocate
- ◯ replicate

An _____ ending can change a verb's tense. 1 point

- ◯ influential
- ◯ inflectional

Dad _____ one smoke detector per room for optimal safety. 1 point

- ◯ alternated
- ◯ allocated

The scouts set out on an _____ into the wilderness. 1 point

- ◯ exposition
- ◯ expedition

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Homophones Quiz

Choose the word that correctly completes the sentence.

What is your name?

Your answer

1. Malik poured himself a bowl of _____. 1 point

- ◯ serial
- ◯ cereal

2. We need _____ milk, and eggs for the recipe. 1 point

- ◯ flower
- ◯ flour

3. Ava and Keiran waved to _____ parents from the window of the bus. 1 point

- ◯ there
- ◯ their

4. Would you be able to _____me your jacket? 1 point

- ◯ loan
- ◯ lone

5, Safia _____ all the answers on the test. 1 point

- ◯ knew
- ◯ new

6. I caught the ball when Coach Taylor _____ it to me. 2 points

- ◯ through
- ◯ threw

7. The dog let out a _____ when it saw the squirrel. 1 point

- ◯ groan
- ◯ grown

8. I can't find the last _____ for this puzzle. 1 point

- ◯ peace
- ◯ piece

9. Jack's mom is _____ to pick him up from practice. 1 point

- ◯ here
- ◯ hear

10. _____ did you see where I put my backpack? 1 point

- ◯ Hey
- ◯ Hay

Submit

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Writing: Response to Literature

Answer each question using a complete sentence.

* Required

What is your name? *

Your answer

1. What is the name of the story? 1 point

Your answer

2. Who are the main characters? 2 points

Your answer

3. What is the setting of the story? 2 points

Your answer

4. What happens in the story? (5 details) 5 points

Your answer

5. What is your opinion of the story? (Did you like it? Why or Why Not? or Did you not like it? Why or Why Not?) 4 points

Your answer

Submit

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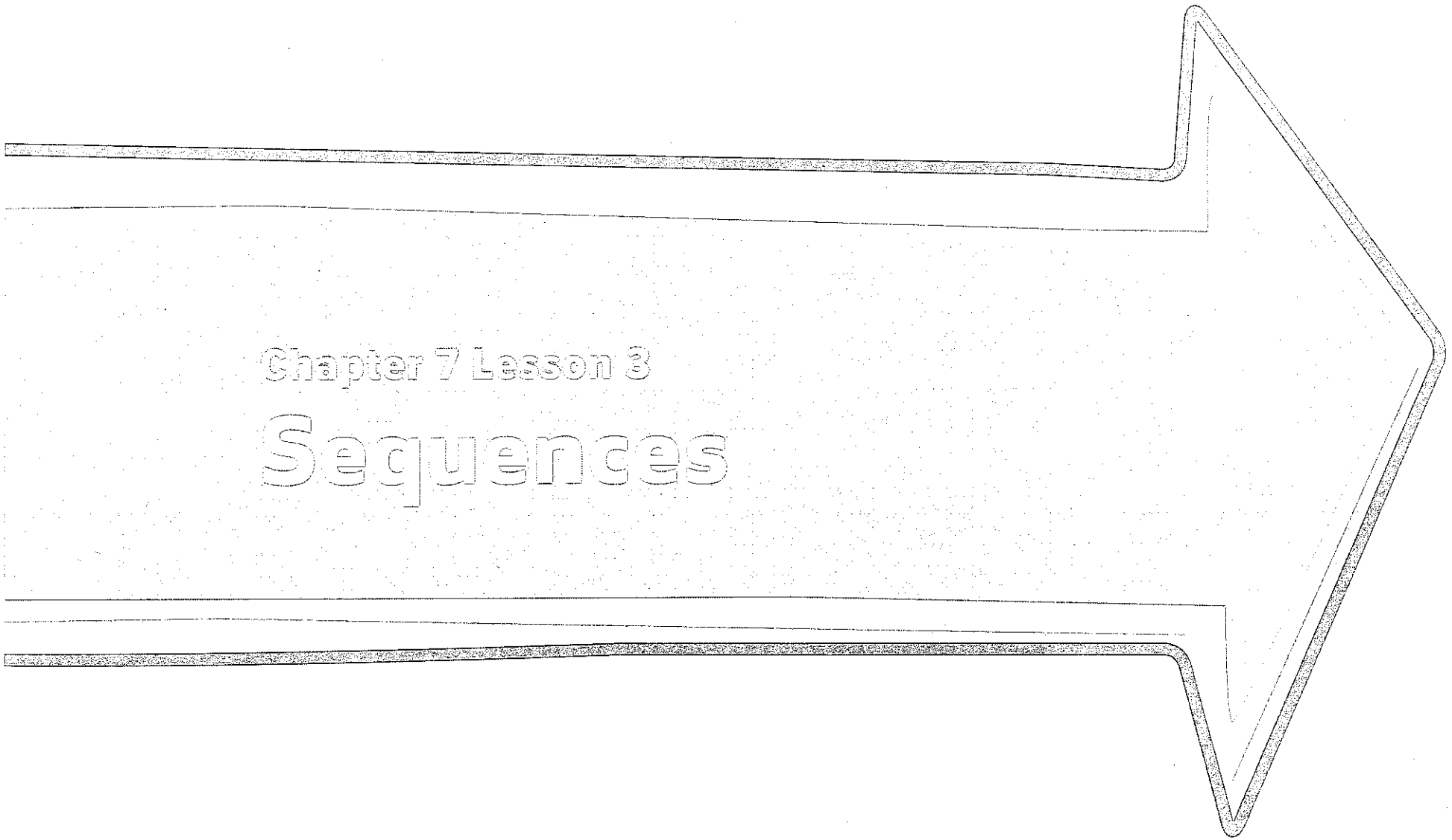


Slide 1: Title

ESSENTIAL QUESTION

How are patterns used in mathematics?

Problem of the Day

Mrs. Jacob writes numbers on the board in a pattern. What are the next 3 numbers in the pattern?

10, 20, 40, 70, 110, _____, _____, _____

Describe the pattern.

Problem of the Day

Mrs. Jacob writes numbers on the board in a pattern. What are the next 3 numbers in the pattern?

10, 20, 40, 70, 110, 160, 220, 290

Describe the pattern.

A growing pattern that adds 10 more than the previous number that was added.

Quick Check

Find the rule for each pattern.

1. 12, 17, 22, 27, 32, 37
2. 2, 5, 4, 7, 6, 9, 8

Find the next number in each pattern.

3. 12, 14, 13, 15, 14, 16, ☐
4. 12, 17, 12, 17, 12, 17, ☐

Quick Check

Find the rule for each pattern.

1. 12, 17, 22, 27, 32, 37 Add 5.
2. 2, 5, 4, 7, 6, 9, 8 Add 3; Then subtract 1.

Find the next number in each pattern.

3. 12, 14, 13, 15, 14, 16, 15
4. 12, 17, 12, 17, 12, 17, 12

Quick Check

5. Test Practice The numbers in the pattern decrease by the same amount each time. What are the next three numbers in the pattern?

37, 32, 27, 22, ☐ ☐

A. 18, 14, 10

B. 18, 13, 8

C. 17, 13, 8

D. 17, 12, 7

Quick Check

5. Test Practice The numbers in the pattern decrease by the same amount each time. What are the next three numbers in the pattern?

37, 32, 27, 22, ☐ ☐

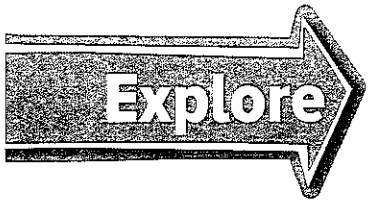
A. 18, 14, 10

B. 18, 13, 8

C. 17, 13, 8

D. 17, 12, 7

INVESTIGATE the Math

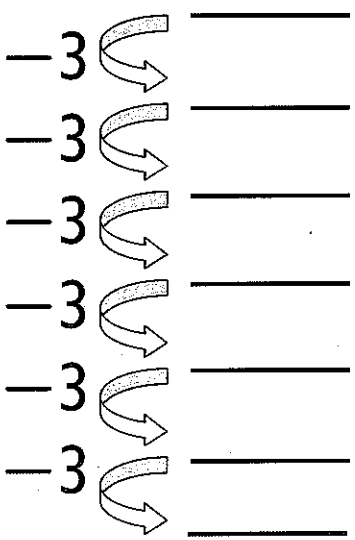


What is the relationship between patterns and sequences?

INVESTIGATE the Math

Model

Model 18 manipulatives. Demonstrate the rule "subtract 3" until you cannot remove 3 objects. Complete the observations below.



The total number of items in my sequence is _____

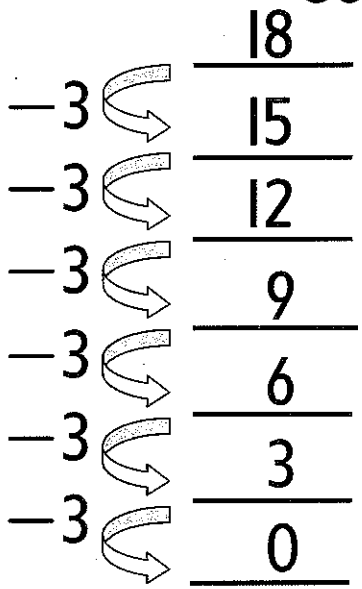
The first number in my sequence is (circle one): even odd.

The second number in my sequence is (circle one): even odd.

INVESTIGATE the Math

Model

Model 18 manipulatives. Demonstrate the rule "subtract 3" until you cannot remove 3 objects. Complete the observations below.

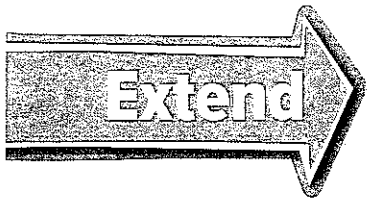


The total number of items in my sequence is 7

The first number in my sequence is (circle one): (even) odd.

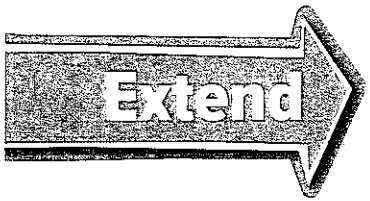
The second number in my sequence is (circle one): even (odd).

INVESTIGATE the Math



A sequence starts with 4 and follows the rule "add 5". Find the first 10 elements of the sequence. Then write a story about the sequence.

INVESTIGATE the Math



A sequence starts with 4 and follows the rule "add 5". Find the first 10 elements of the sequence. Then write a story about the sequence.

4, 9, 14, 19, 24, 29, 34, 39, 44, 49

Sample Answer: Mike starts with $4 to save for a new bike. Each week he saves $5. After 9 weeks, he has $49 saved.

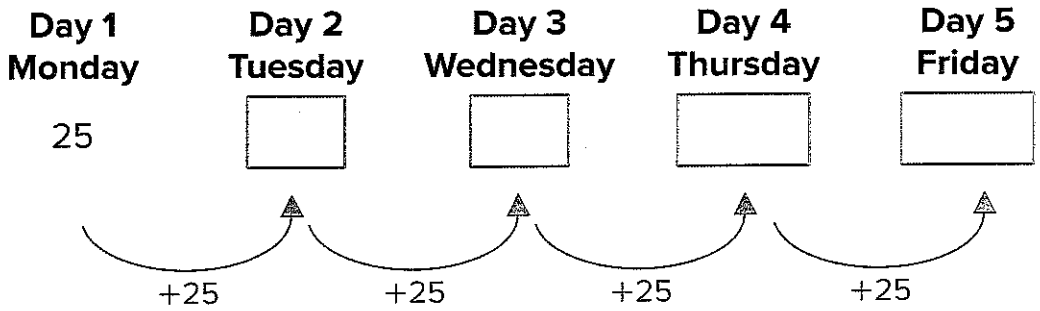
Math in My World

Example 1 **Crystal starts reading her book on Monday. She reads 25 pages on the first day. Each day, she reads 25 pages. How many total pages will she have read by Tuesday, Wednesday, Thursday, and Friday?**

The first term of the sequence is 25.

The rule is add 25.

Extend the pattern.



So, Crystal will have read _____ pages by Tuesday, _____ pages by Wednesday, _____ pages by Thursday, and _____ pages by Friday.

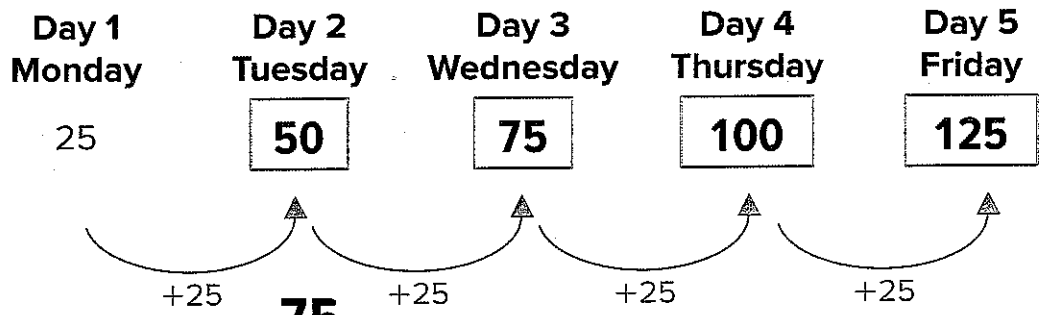
Math in My World

Example 1 **Crystal starts reading her book on Monday. She reads 25 pages on the first day. Each day, she reads 25 pages. How many total pages will she have read by Tuesday, Wednesday, Thursday, and Friday?**

The first term of the sequence is 25.

The rule is add 25.

Extend the pattern.



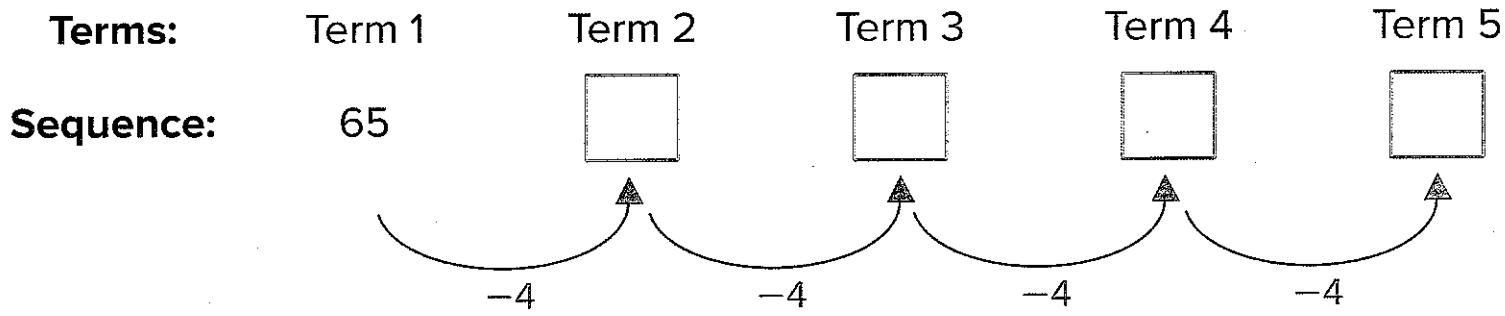
So, Crystal will have read **50** pages by Tuesday, **75** pages by Wednesday, **100** pages by Thursday, and **125** pages by Friday.

Math in My World

Example 2

The first term of a sequence is 65. The rule of the sequence is subtract 4. Find the next four terms in the sequence. Then make observations about the pattern.

1 Find the next four terms.



The next four terms in the sequence are ____, ____, ____, and ____.

Math in My World

Example 2

The first term of a sequence is 65. The rule of the sequence is subtract 4. Find the next four terms in the sequence. Then make observations about the pattern.

1 Find the next four terms.

Terms:	Term 1	Term 2	Term 3	Term 4	Term 5
Sequence:	65	**61**	**57**	**53**	**49**

The next four terms in the sequence are **61**, **57**, **53**, and **49**.

Math in My World

Example 2

The first term of a sequence is 65. The rule of the sequence is subtract 4. Find the next four terms in the sequence. Then make observations about the pattern.

Make observations about the pattern.

Circle whether the terms are all odd or even. odd even

Circle whether the terms increase or decrease. increase decrease

Extend the pattern to a total of 10 terms.

65, , , , , , , , ,

Make another observation about the pattern.

The ones digits repeat the pattern 5, 1, , , and .

Math in My World

Example 2

The first term of a sequence is 65. The rule of the sequence is subtract 4. Find the next four terms in the sequence. Then make observations about the pattern.

2 Make observations about the pattern.

Circle whether the terms are all odd or even. (odd) even

Circle whether the terms increase or decrease. increase (decrease)

Extend the pattern to a total of 10 terms.

65, **61**, **57**, **53**, **49**, **45**, **41**, **37**, **33**, **29**

Make another observation about the pattern.

The ones digits repeat the pattern 5, 1, **7**, **3**, and **9**.

Guided Practice

Extend each pattern by four terms. Write an observation about the pattern.

1. Rule: add 7

Pattern: 8, ____, ____, ____, ____

Observation: ____

Guided Practice

Extend each pattern by four terms. Write an observation about the pattern.

1. Rule: add 7

Pattern: 8, **15**, **22**, **29**, **36**

Observation: **Sample answer: The terms alternate between even and odd numbers.**

Guided Practice

Extend each pattern by four terms. Write an observation about the pattern.

2. Rule: subtract 10

Pattern: 90, , , ,

Observation:

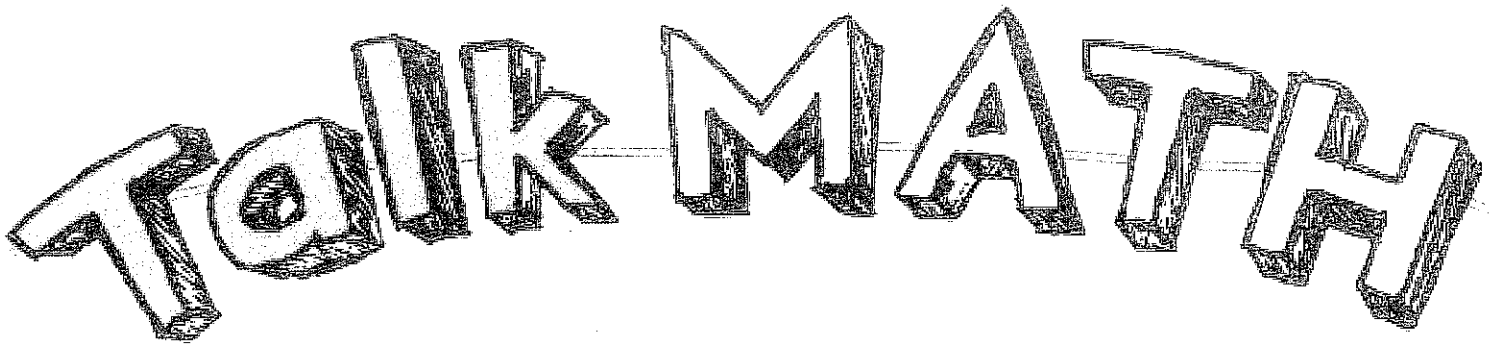
Guided Practice

Extend each pattern by four terms. Write an observation about the pattern.

2. Rule: subtract 10

Pattern: 90, **80**, **70**, **60**, **50**

Observation: **Sample answer: The terms all have a zero in the ones place.**



How does the operation of a rule affect the terms of a sequence?

Independent Practice

Extend each pattern by four terms. Write an observation about the pattern.

3. Rule: add 9

Pattern: 7, , , , ,

Observation:

4. Rule: add 12

Pattern: 2, , , , ,

Observation:

Independent Practice

Extend each pattern by four terms. Write an observation about the pattern.

Sample observations:

3. Rule: add 9

Pattern: 7, **16**, **25**, **34**, **43**

Observation: **The terms alternate between even and odd numbers.**

4. Rule: add 12

Pattern: 2, **14**, **26**, **38**, **50**

Observation: **The terms are all even numbers.**

Independent Practice

Extend each pattern by four terms. Write an observation about the pattern.

5. Rule: subtract 9

Pattern: 87, ____, ____, ____, ____

Observation: ____

6. Rule: subtract 5

Pattern: 86, ____, ____, ____, ____

Observation: ____

Independent Practice

Extend each pattern by four terms. Write an observation about the pattern.

Sample observations:

5. Rule: subtract 9

Pattern: 87, **78**, **69**, **60**, **51**

Observation: **The sum of the digits in each term is a multiple of 3.**

6. Rule: subtract 5

Pattern: 86, **81**, **76**, **71**, **66**

Observation: **The ones digits alternate between 6 and 1.**

Independent Practice

Extend each pattern by four terms. Write an observation about the pattern.

7. Rule: multiply by 3

Pattern: 2, , , ,

Observation:

8. Rule: multiply by 4

Pattern: 5, , , ,

Observation:

Independent Practice

Extend each pattern by four terms. Write an observation about the pattern.

Sample observations:

7. Rule: multiply by 3

Pattern: 2, **6**, **18**, **54**, **162**

Observation: **The differences between each term increase.**

8. Rule: multiply by 4

Pattern: 5, **20**, **80**, **320**, **1,280**

Observation: **The first term is odd. The rest of the terms are even.**

Independent Practice

Extend each pattern by four terms. Write an observation about the pattern.

9. Rule: divide by 2

Pattern: 64, , , ,

Observation:

10. Rule: divide by 5

Pattern: 625, , , ,

Observation:

Independent Practice

Extend each pattern by four terms. Write an observation about the pattern.

Sample observations:

9. Rule: divide by 2

Pattern: 64, **32**, **16**, **8**, **4**

Observation: **The differences between each term decrease.**

10. Rule: divide by 5

Pattern: 625, **125**, **25**, **5**, **1**

Observation: **The terms decrease.**

Independent Practice

11. Refer to the sequence 11, 16, 21, 26, 31, 36. Explain why the terms in the sequence will continue to alternate between even and odd numbers.

Independent Practice

11. Refer to the sequence 11, 16, 21, 26, 31, 36. Explain why the terms in the sequence will continue to alternate between even and odd numbers.

Sample answer: The first term is an odd number. The rule is to add 5, which is an odd number. The sum of two odd numbers is even. The sum of an even and an odd number is an odd number. This will continue.

Problem Solving

12. Each pumpkin costs $8. Jaime has already bought $24 worth of pumpkins. Suppose he buys five more pumpkins. How much will he spend in all after he buys each pumpkin? Write a sequence.

Problem Solving

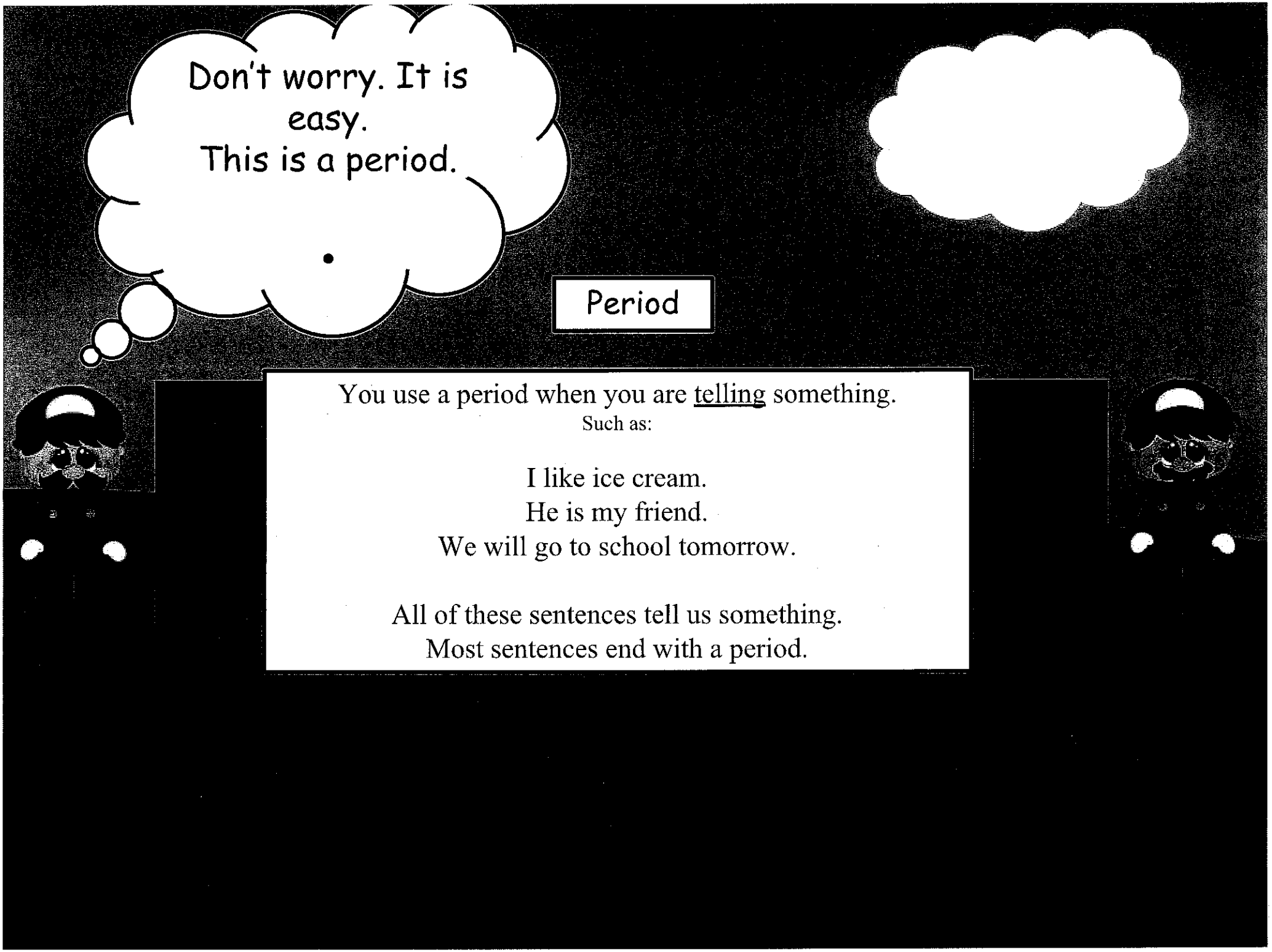
12. Each pumpkin costs $8. Jaime has already bought $24 worth of pumpkins. Suppose he buys five more pumpkins. How much will he spend in all after he buys each pumpkin? Write a sequence.

$64; $32, $40, $48, $56, $64

Problem Solving

13. **Processes & Practices** 3 **Draw a Conclusion** The rule of a pattern is multiply by 3. The first term is 7. What are the next five terms in the sequence?

Write two observations you can make about the pattern.



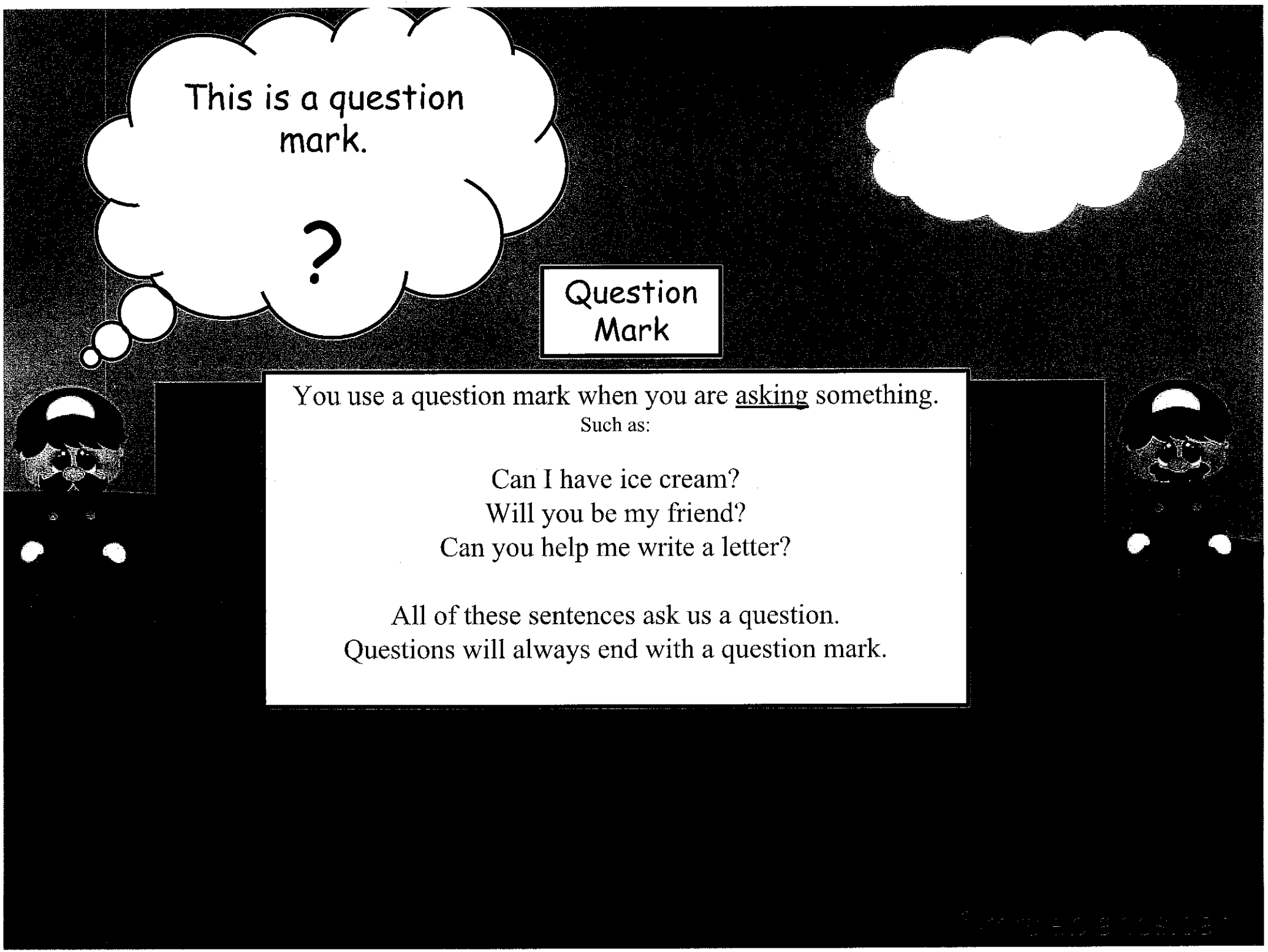
Period

You use a period when you are <u>telling</u> something.

Such as:

I like ice cream.
He is my friend.
We will go to school tomorrow.

All of these sentences tell us something.
Most sentences end with a period.



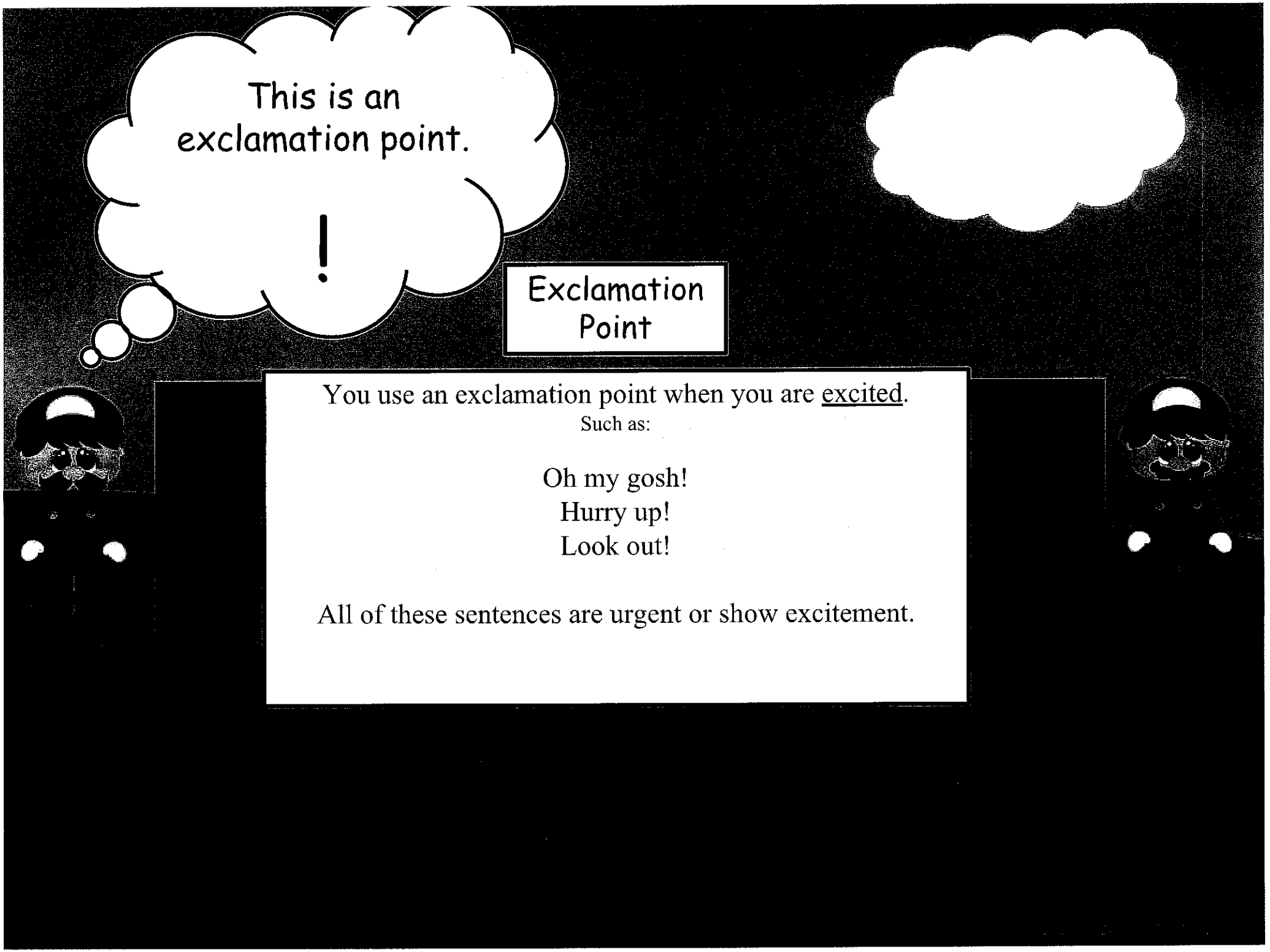
Question Mark

You use a question mark when you are asking something.

Such as:

Can I have ice cream?
Will you be my friend?
Can you help me write a letter?

All of these sentences ask us a question.
Questions will always end with a question mark.



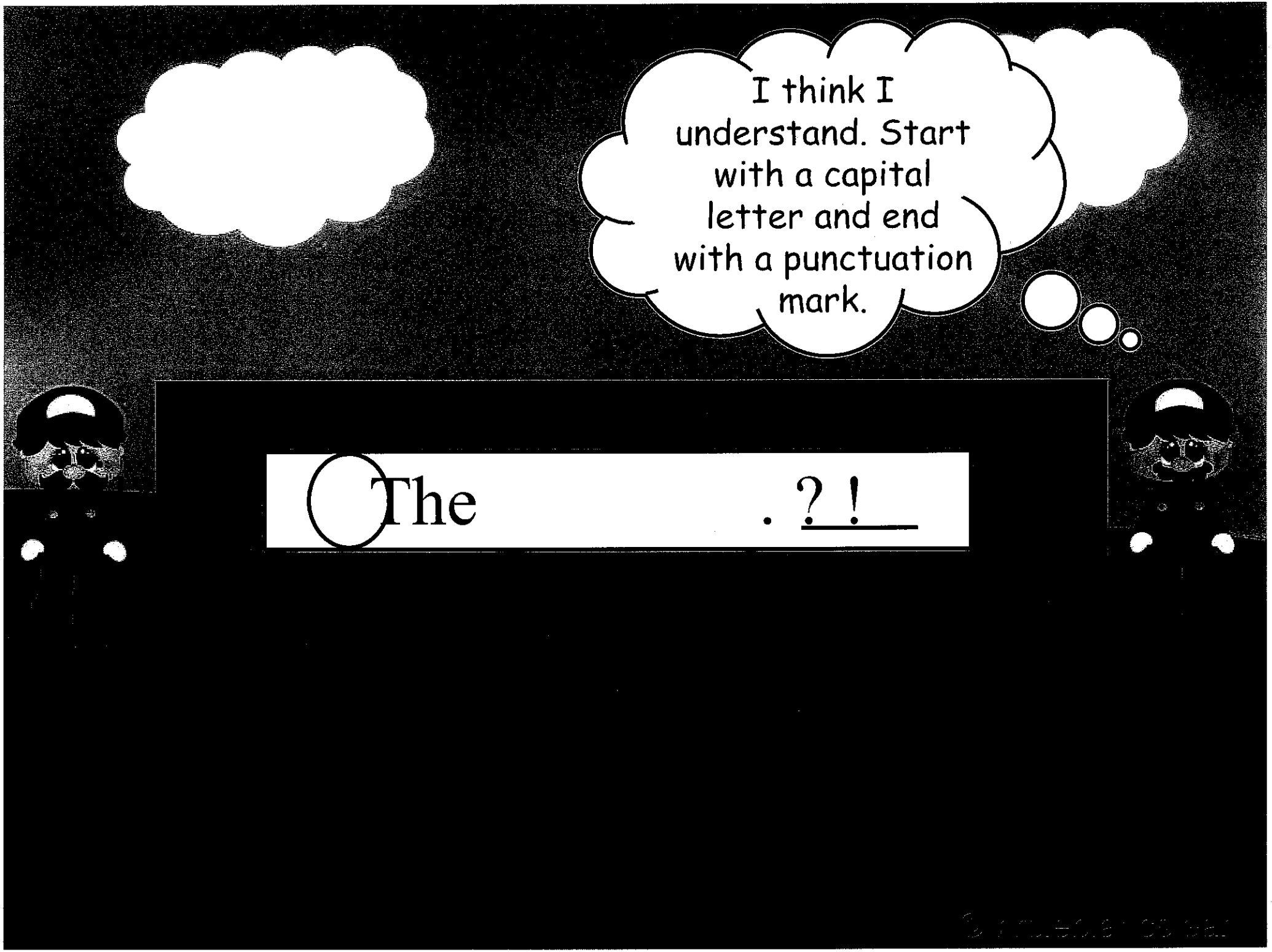
Exclamation Point

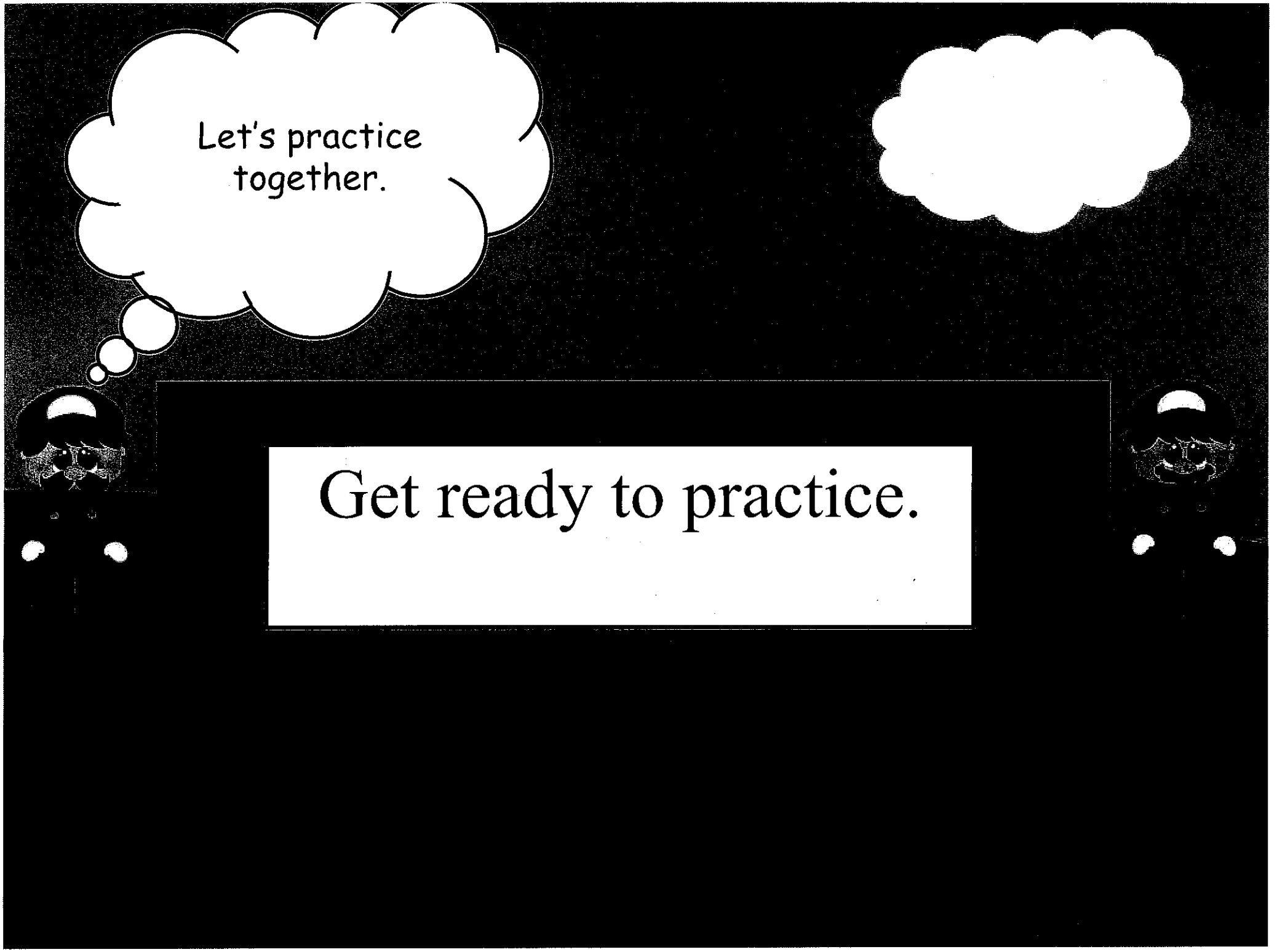
You use an exclamation point when you are excited.

Such as:

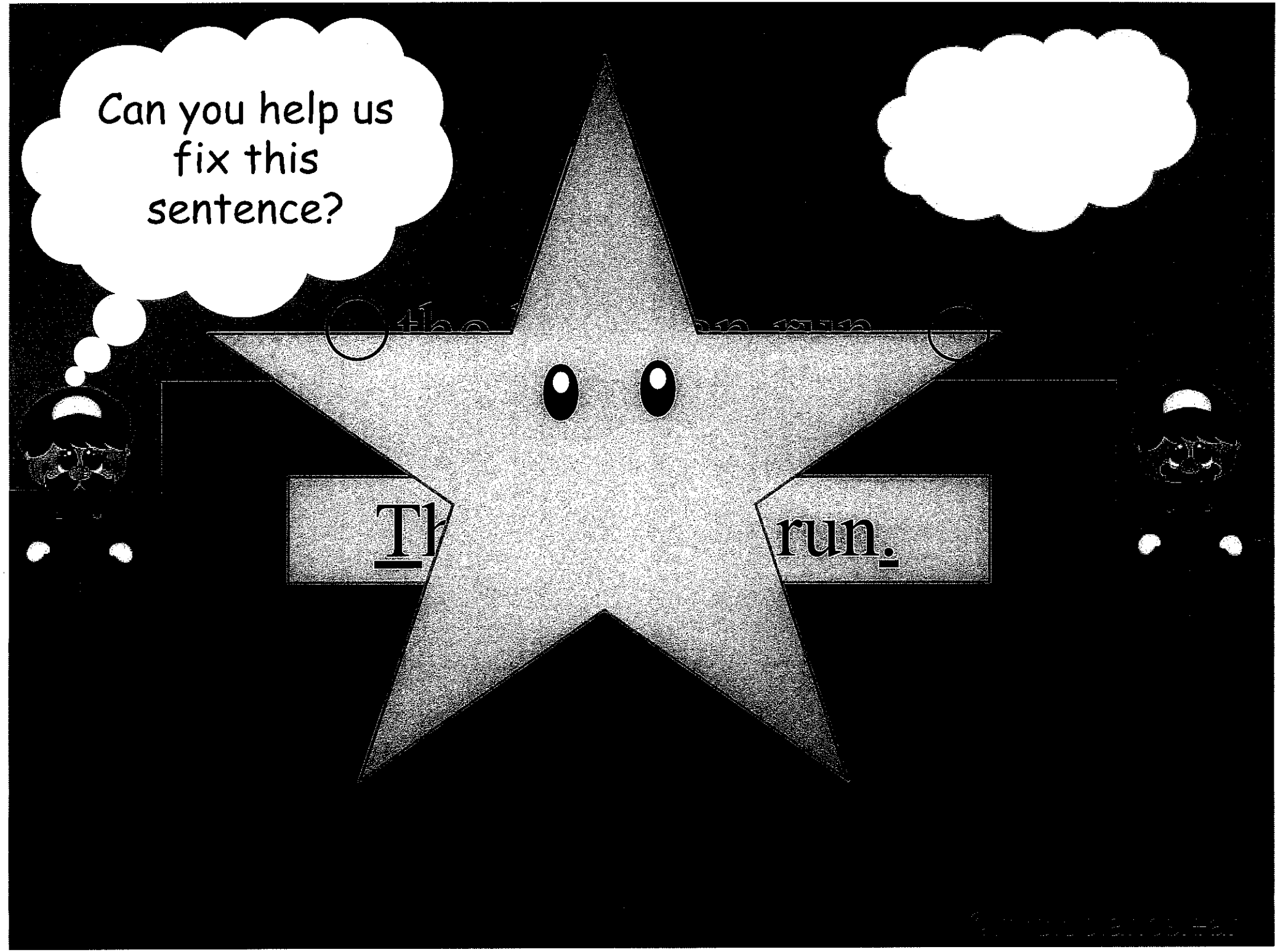
Oh my gosh!
Hurry up!
Look out!

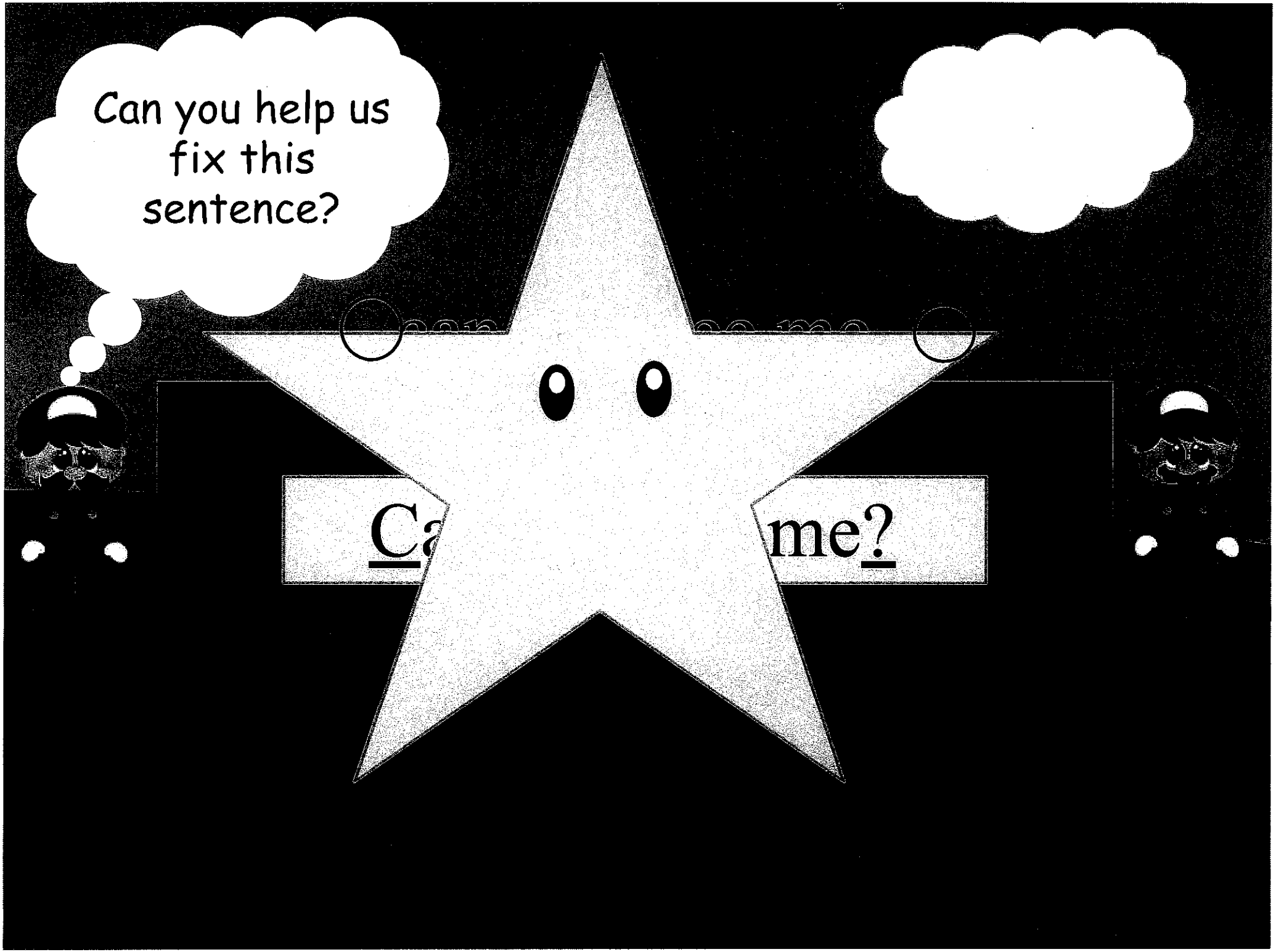
All of these sentences are urgent or show excitement.

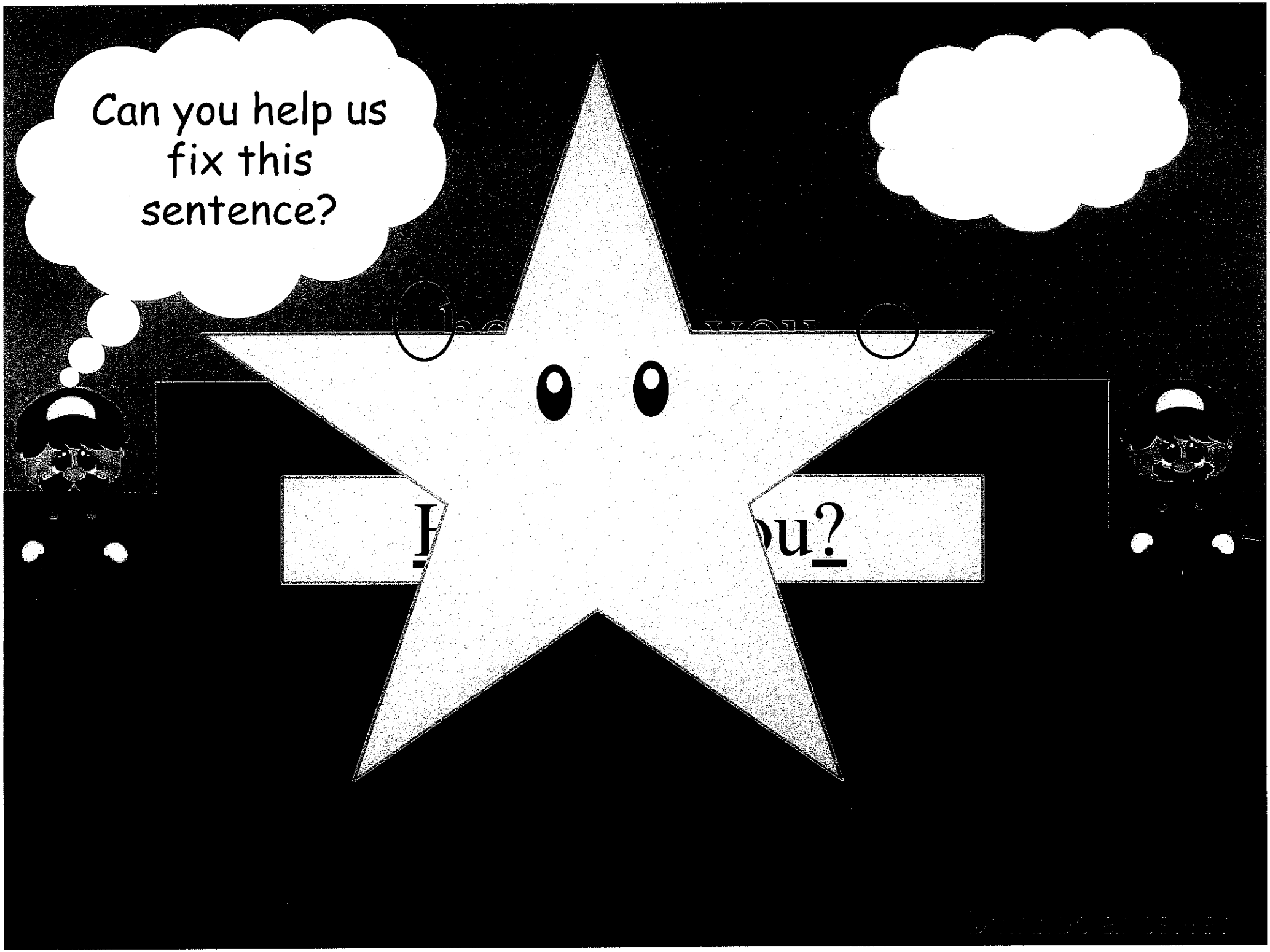

I think I understand. Start with a capital letter and end with a punctuation mark.
The . ? !

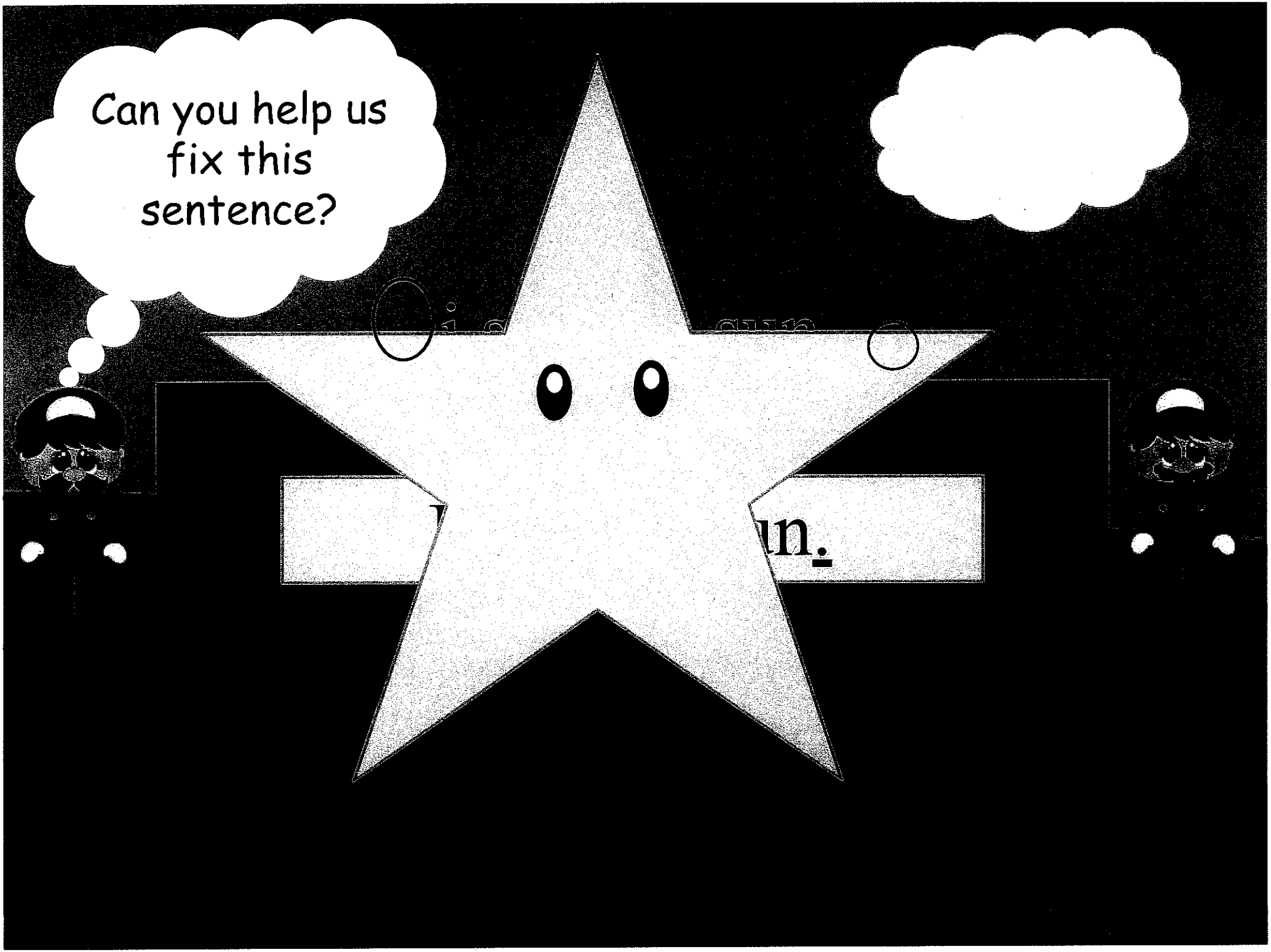


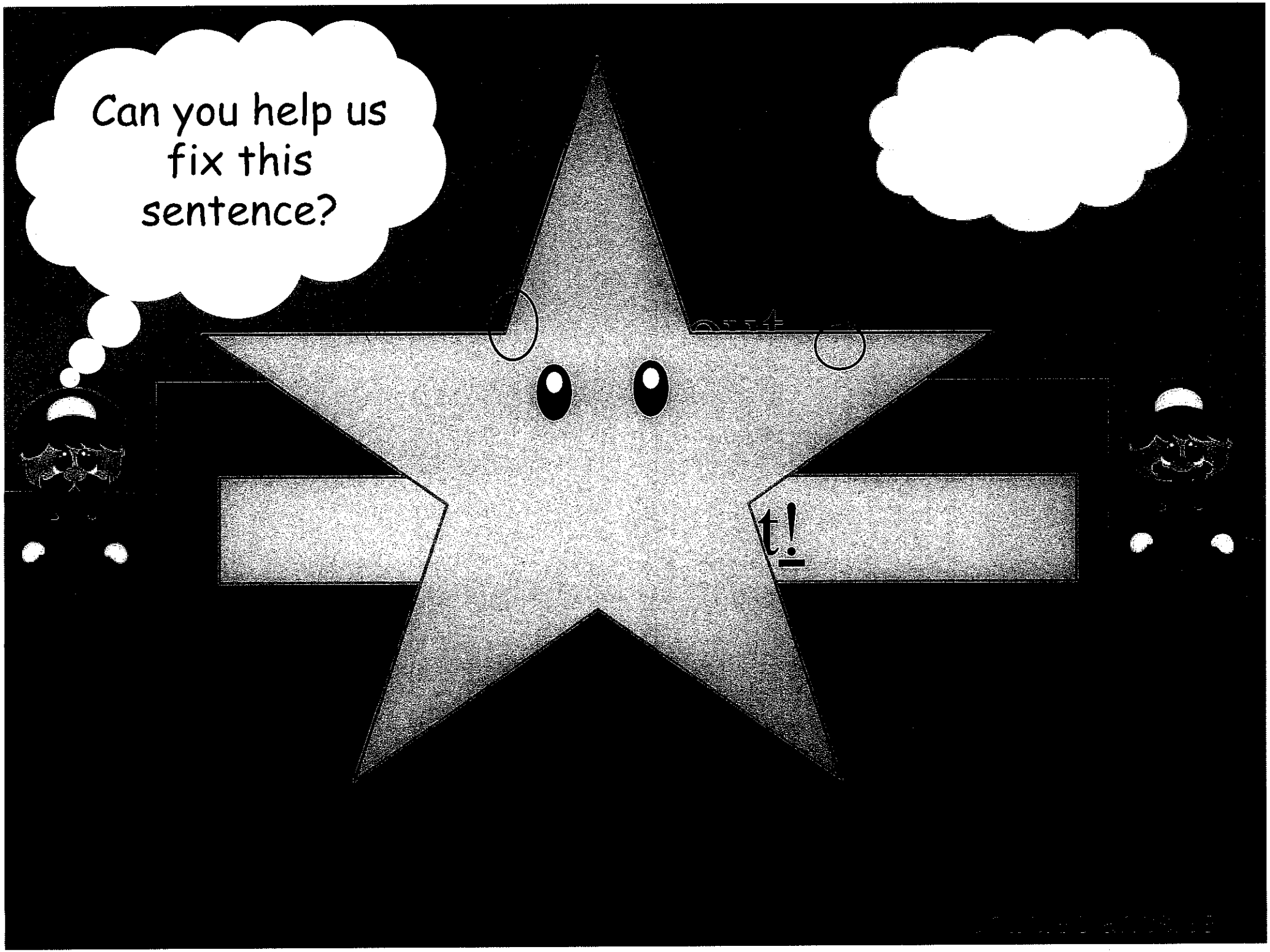
Get ready to practice.

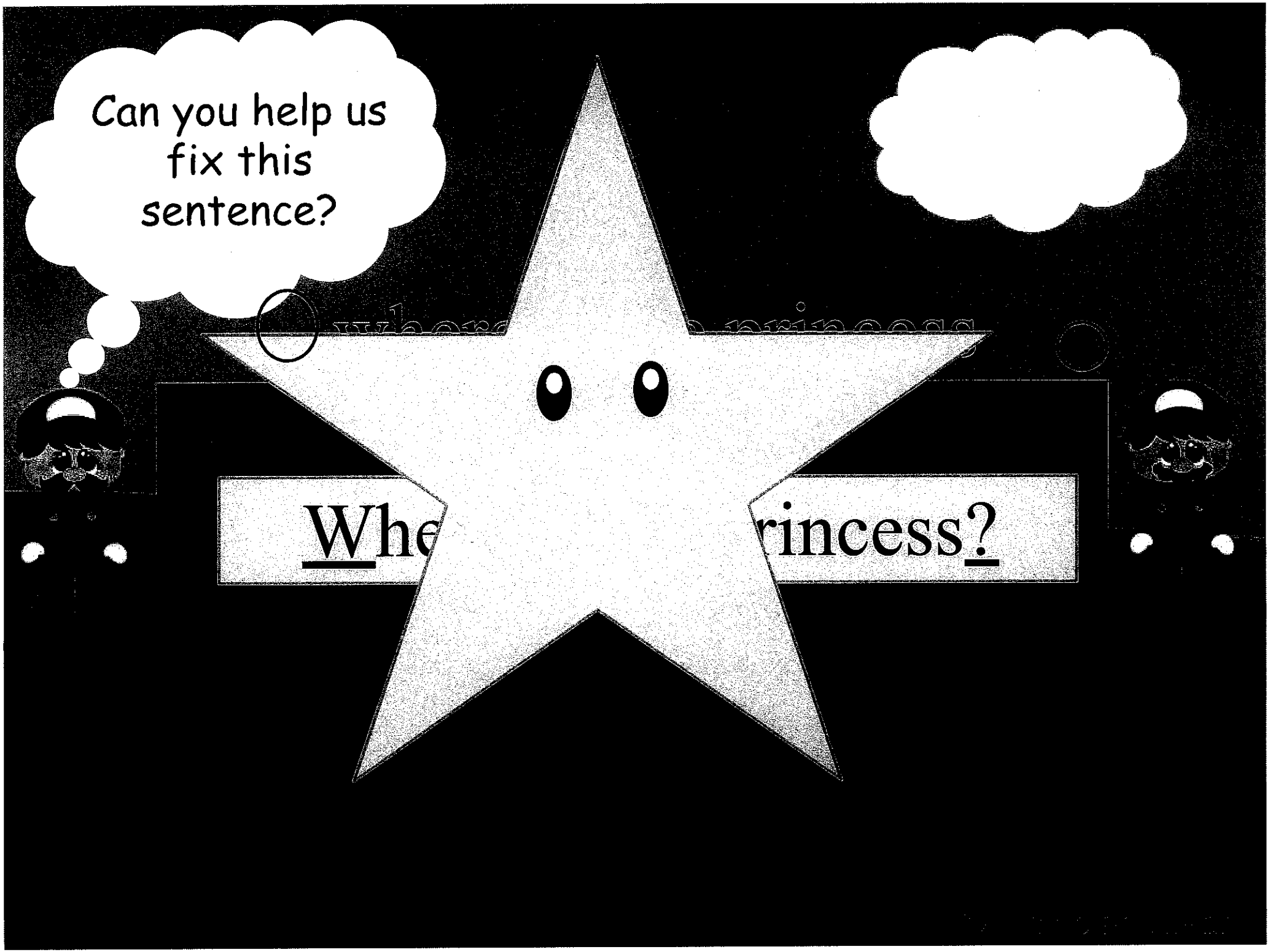

Can you help us fix this sentence?
run.

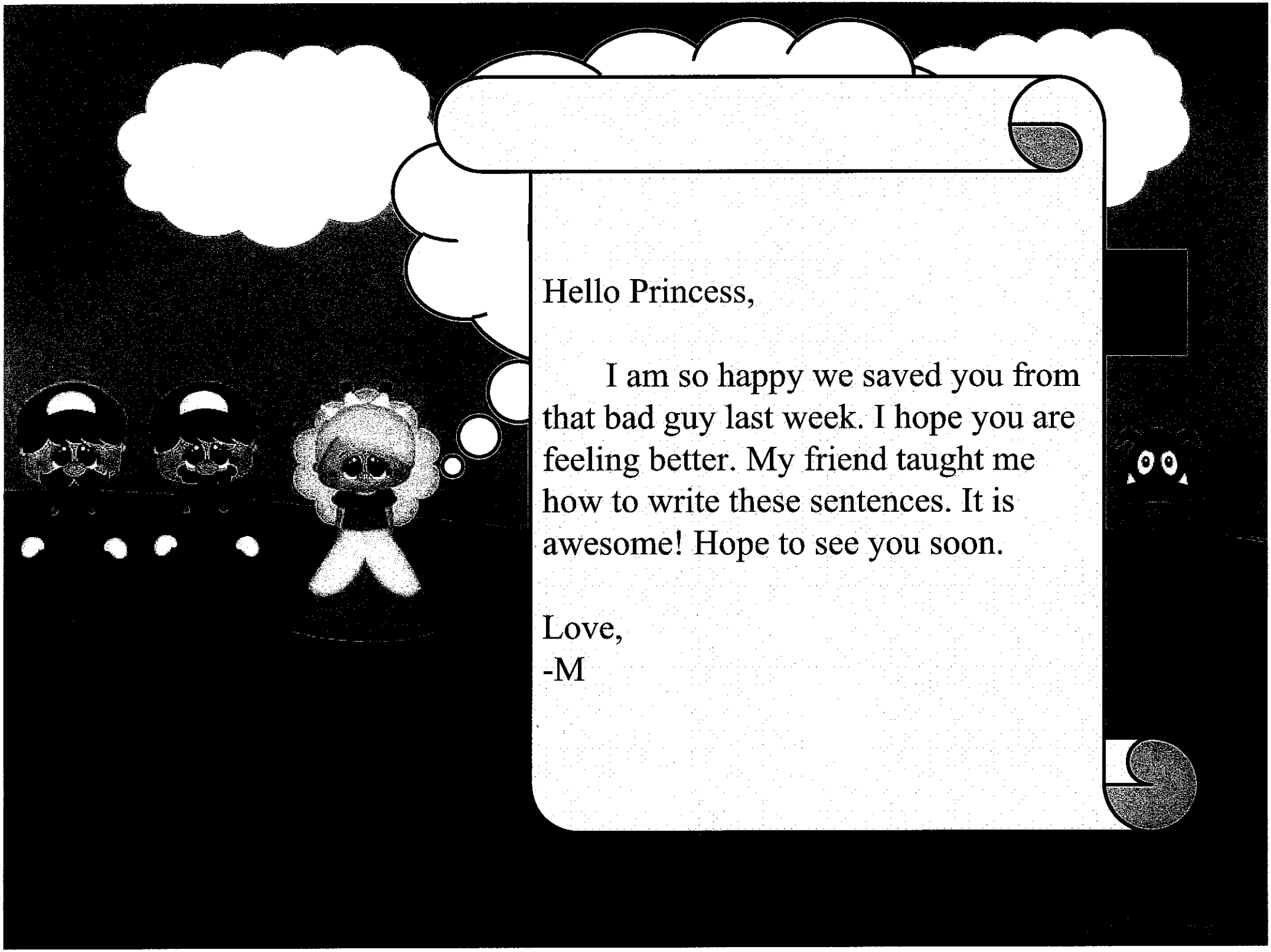

Can you help us fix this sentence?
Ca me?

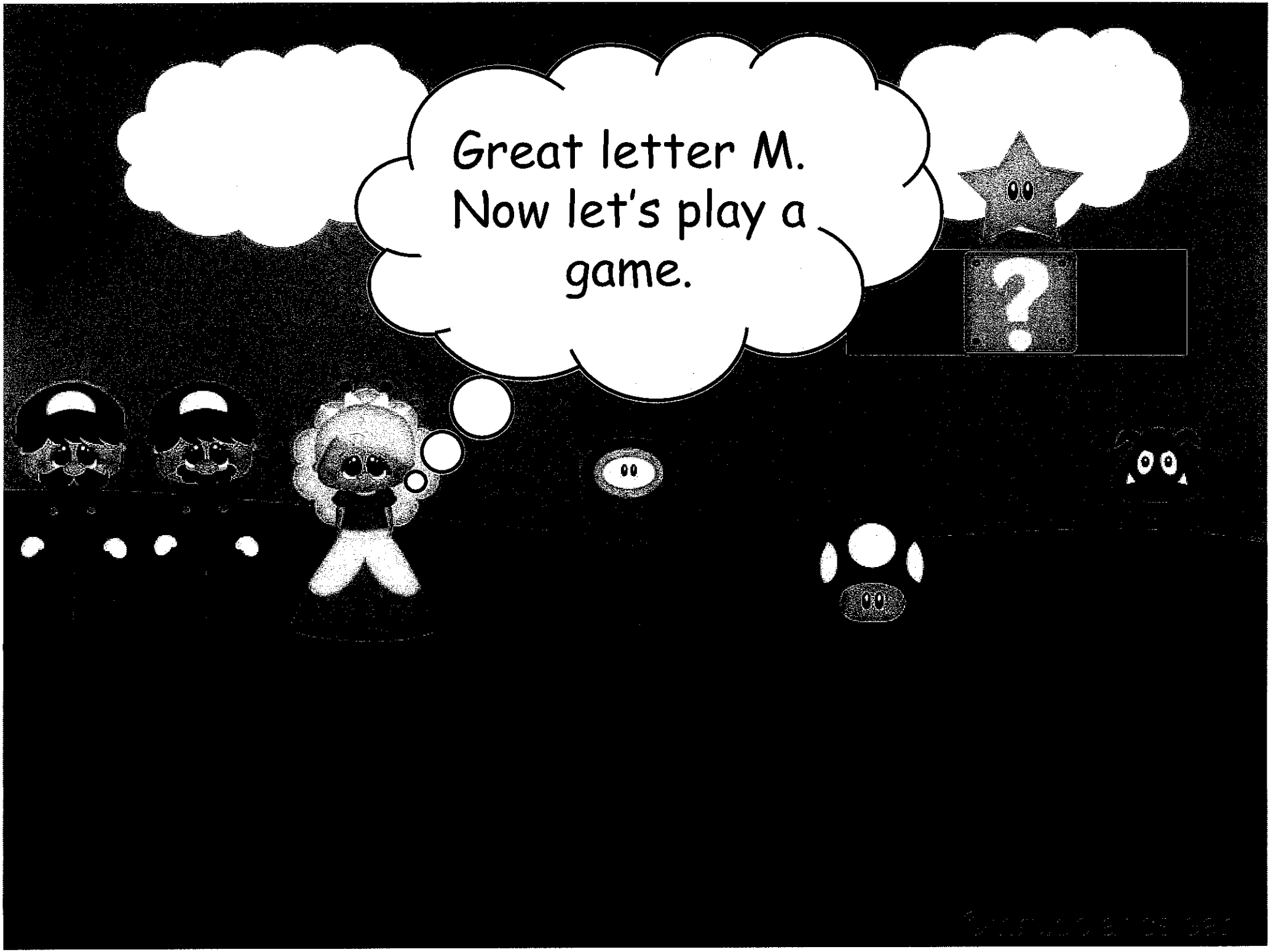

Can you help us fix this sentence?


Can you help us fix this sentence?


Can you help us fix this sentence?
t!

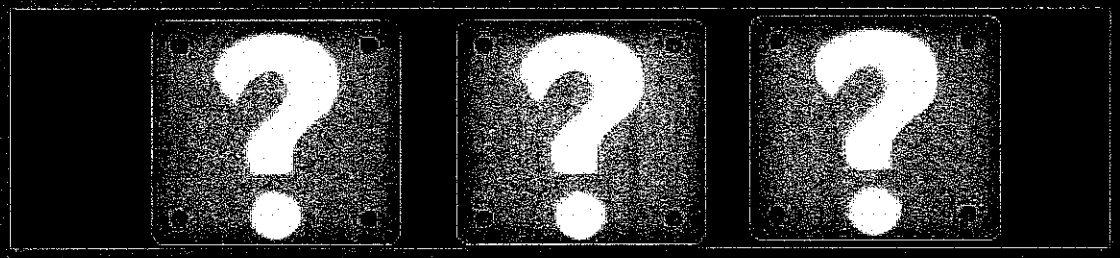

Can you help us fix this sentence?
Whe rincess?


Hello Princess,
I am so happy we saved you from that bad guy last week. I hope you are feeling better. My friend taught me how to write these sentences. It is awesome! Hope to see you soon.
Love,
-M

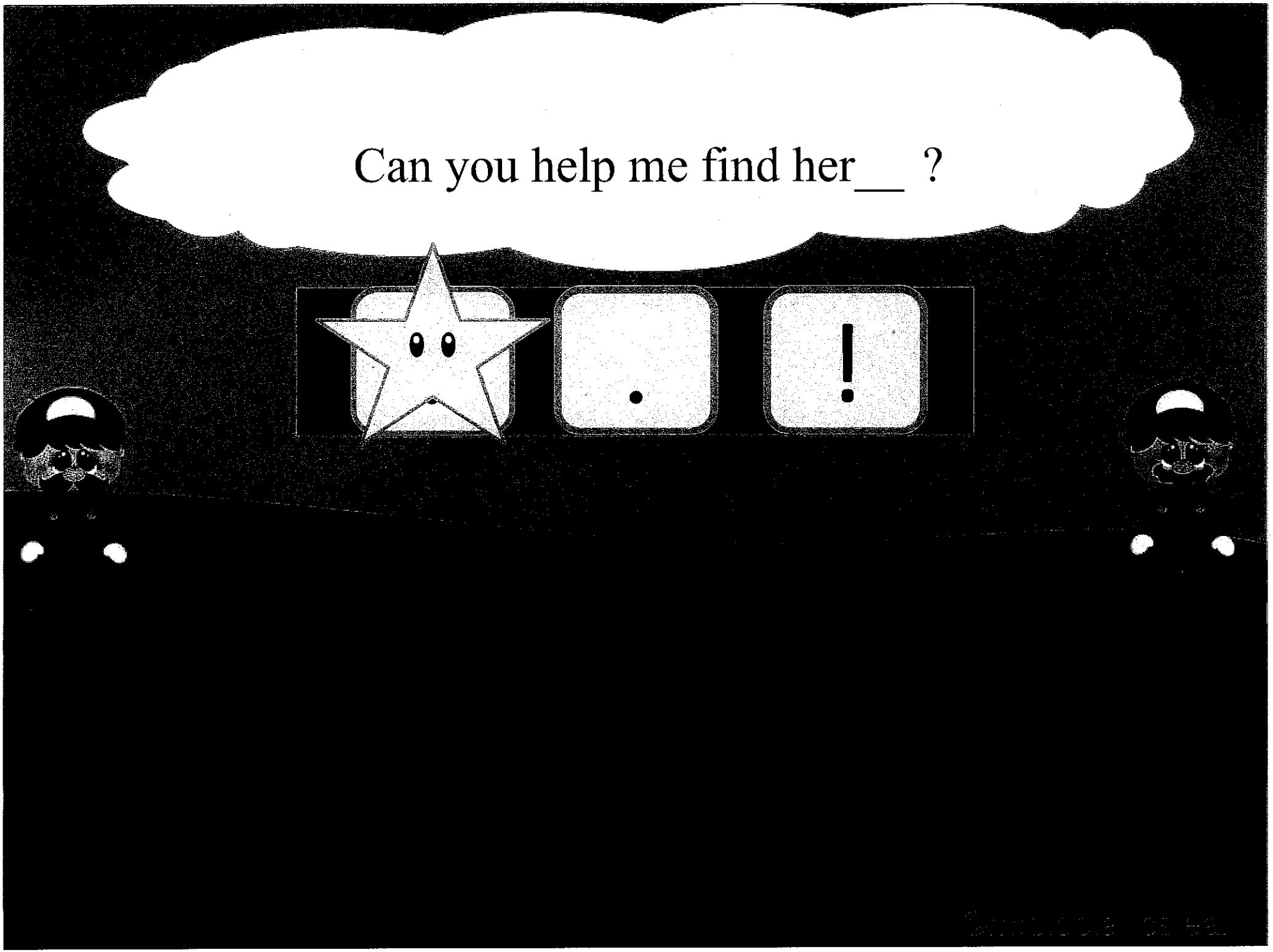

Great letter M.
Now let's play a game.

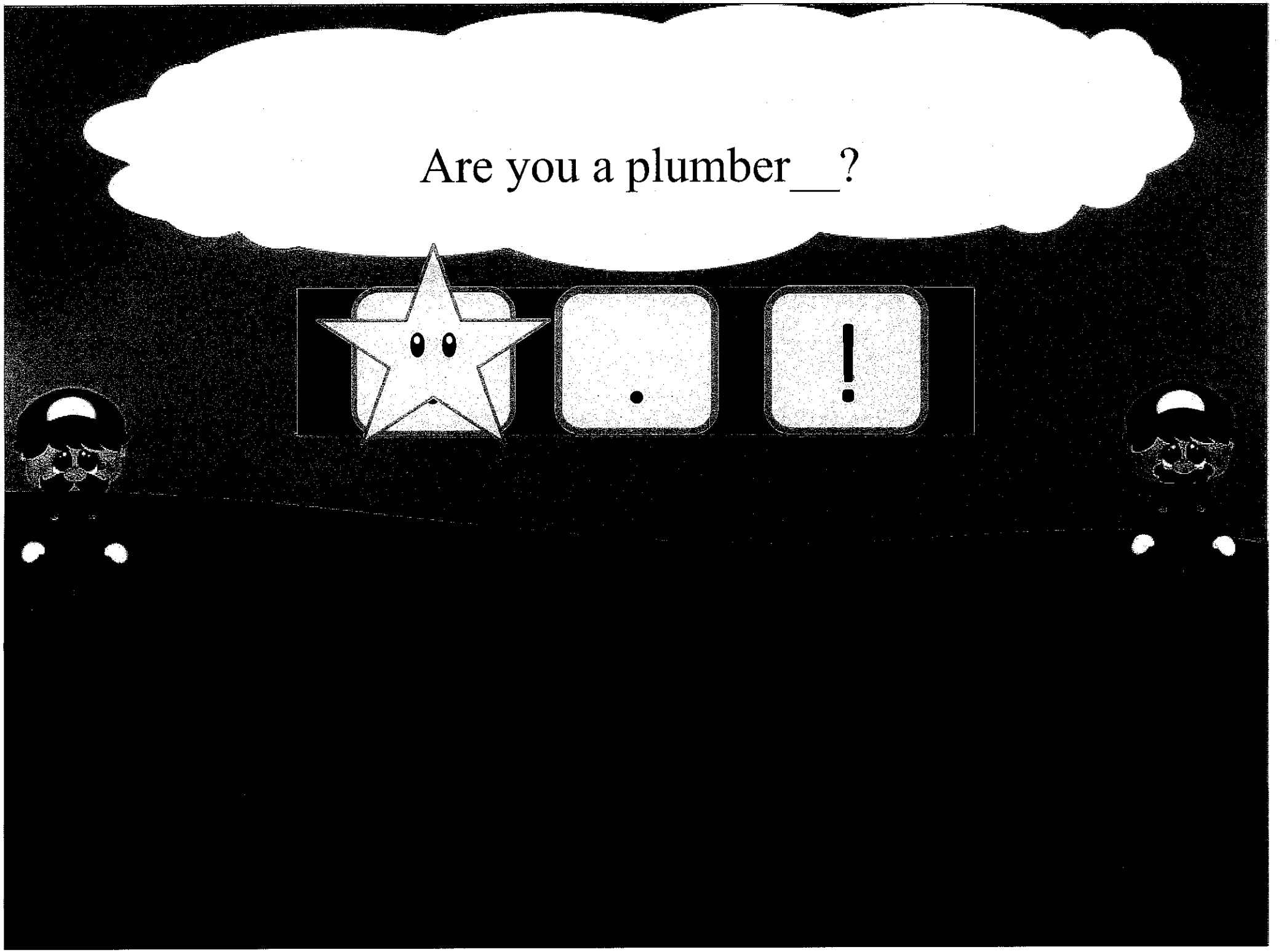
FIX IT

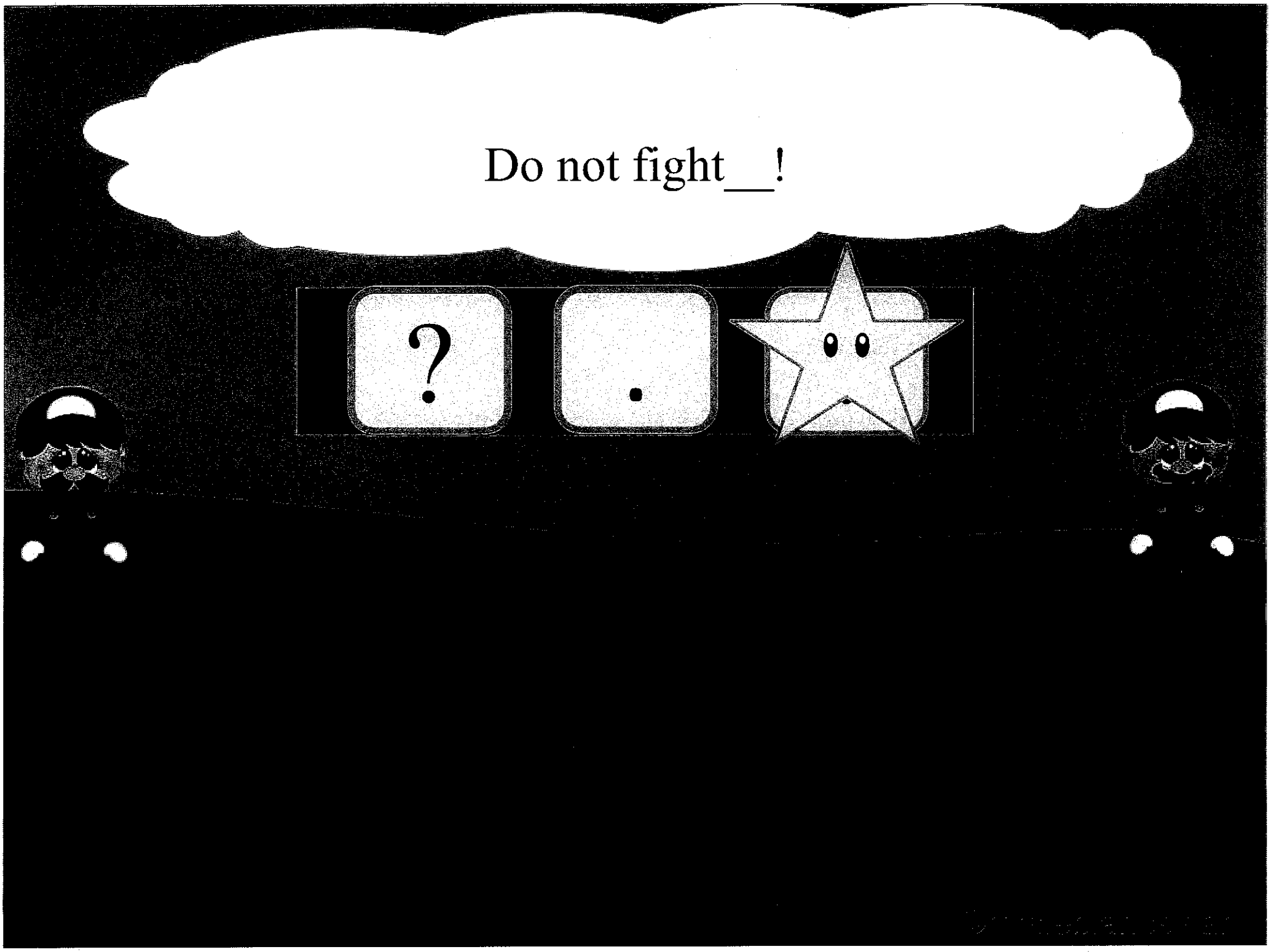
What goes at the end?



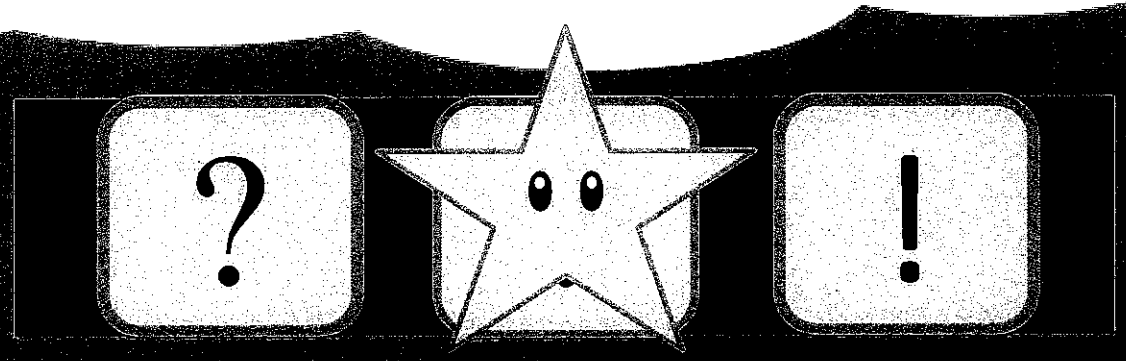
Click on the correct punctuation mark to reveal the answer.

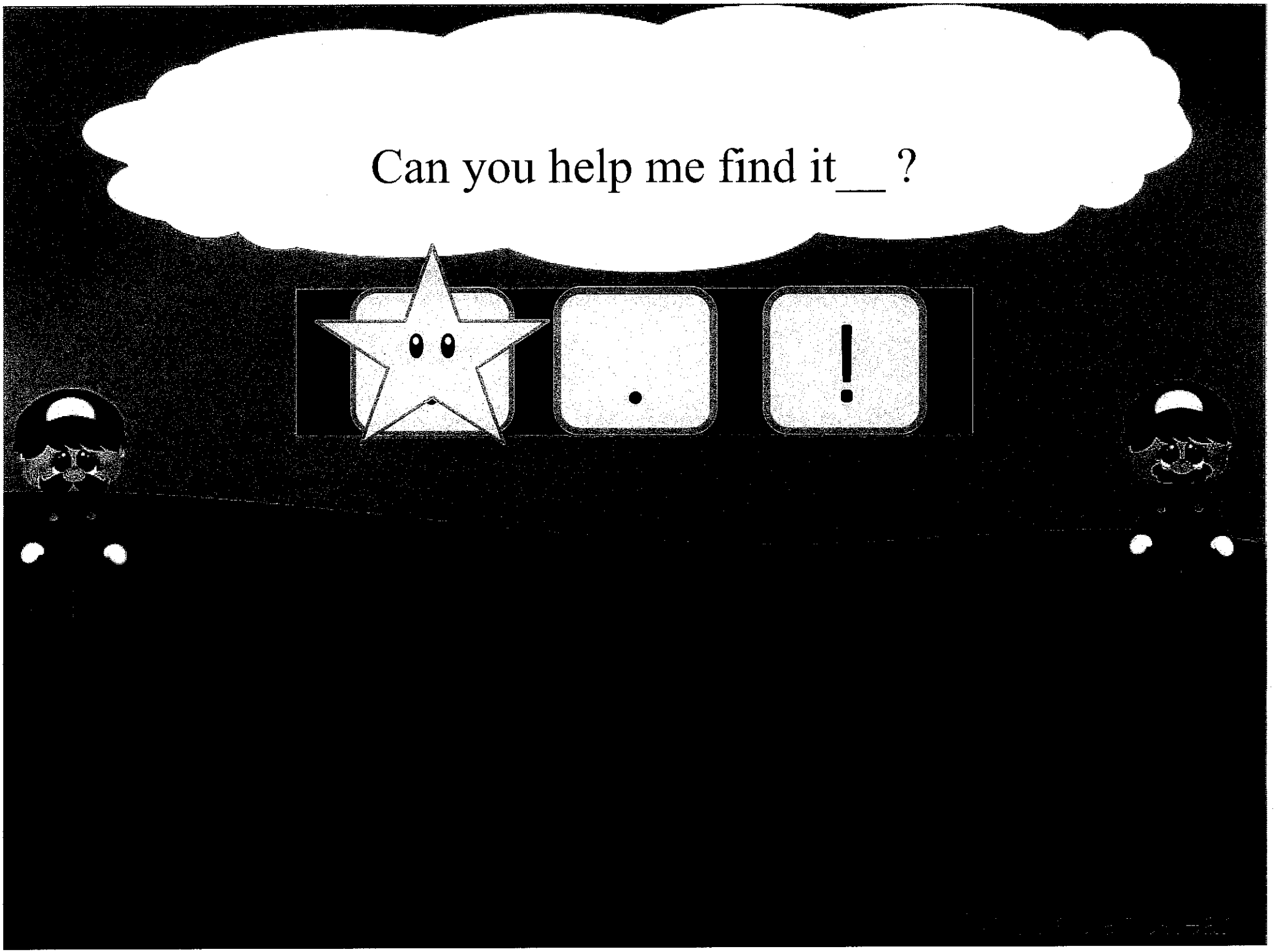

Can you help me find her__ ?
.
!


Are you a plumber__?
.
!

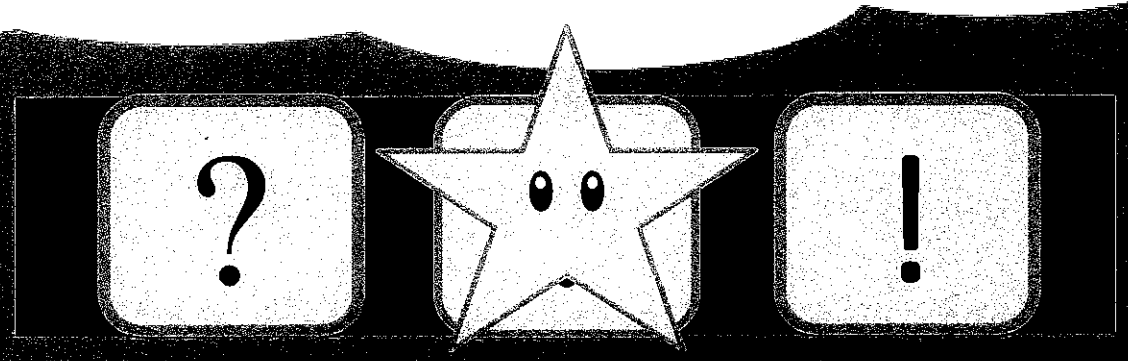

Do not fight__!
?
.

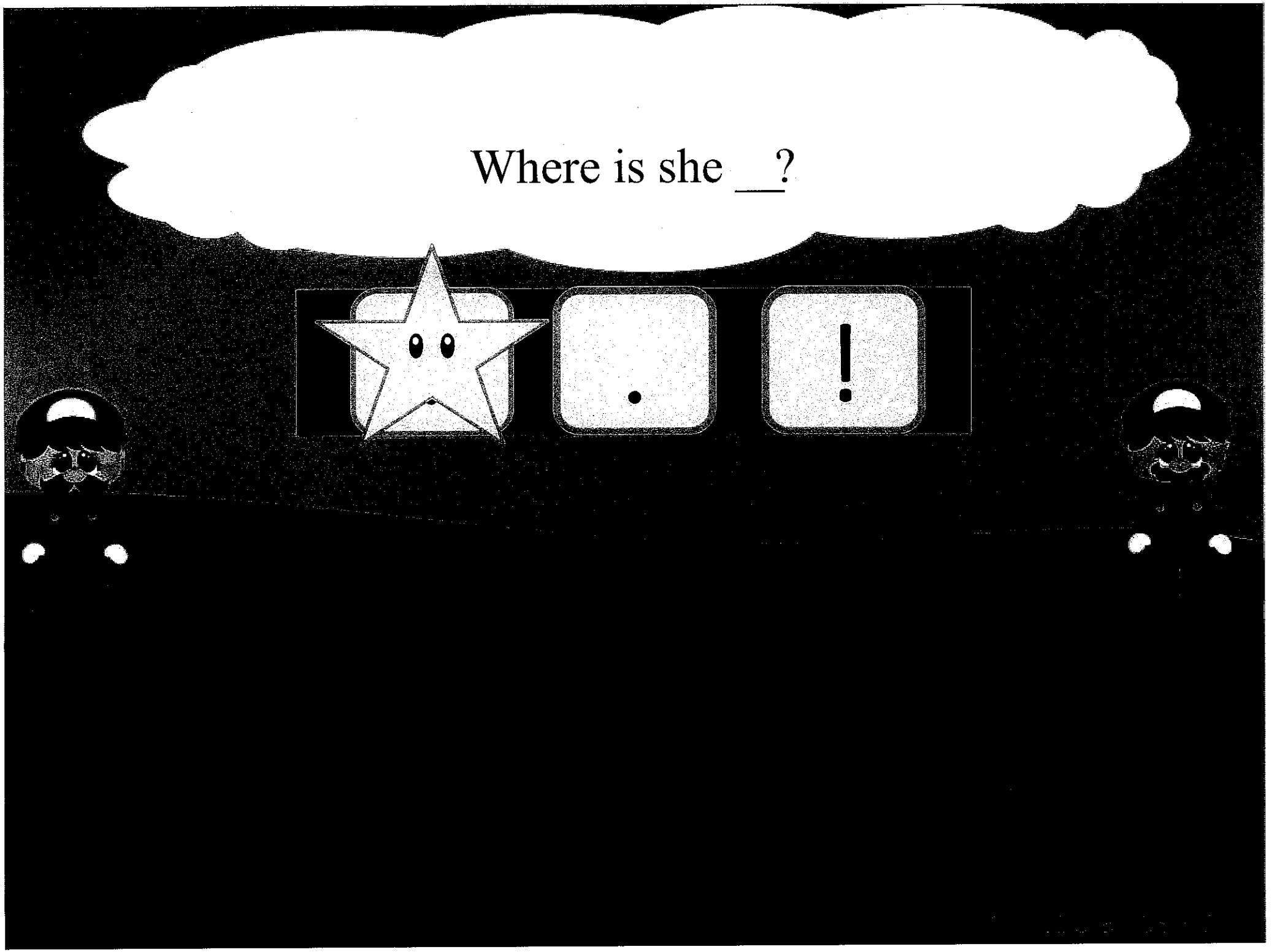
I want to play again__.

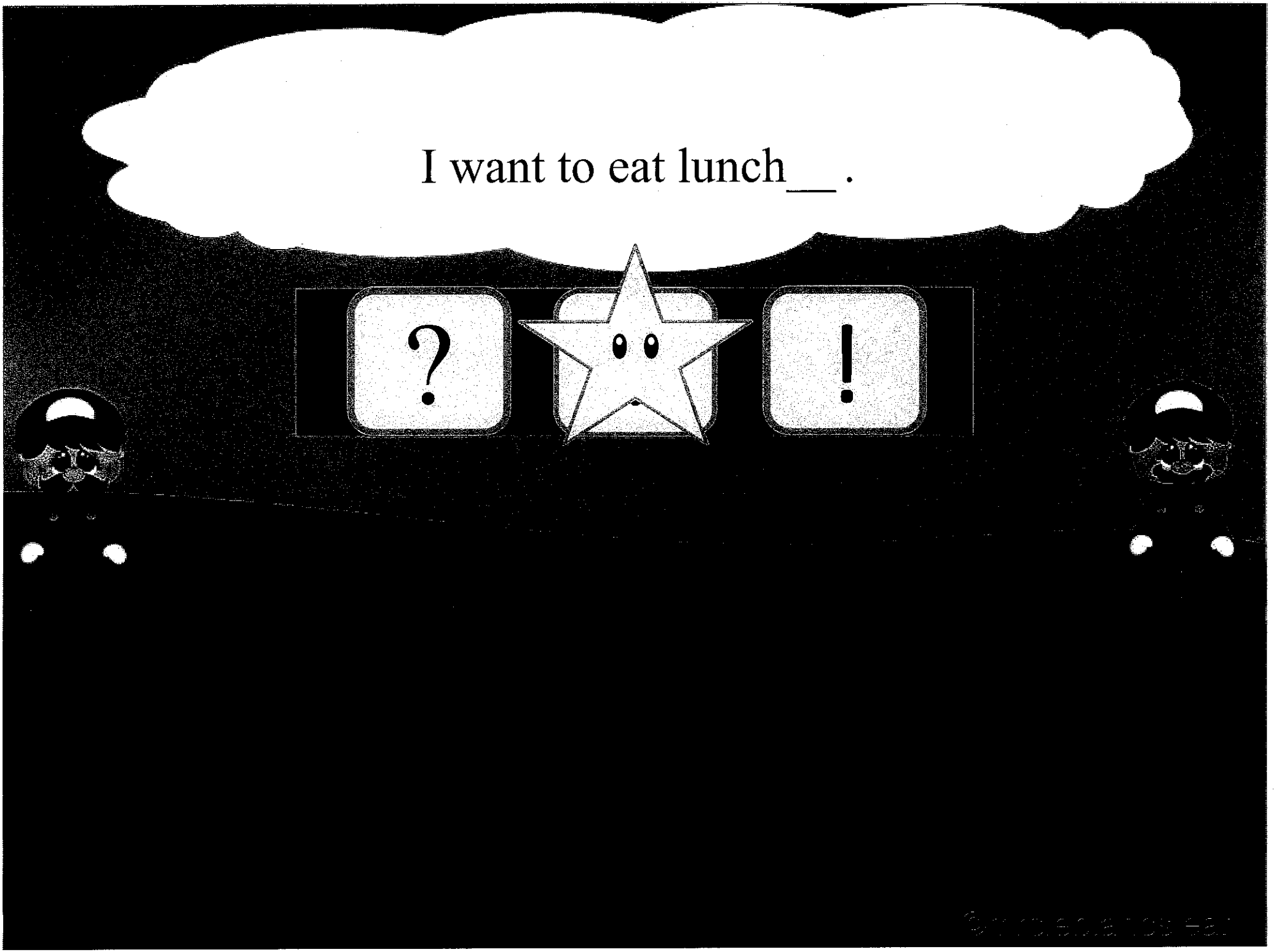


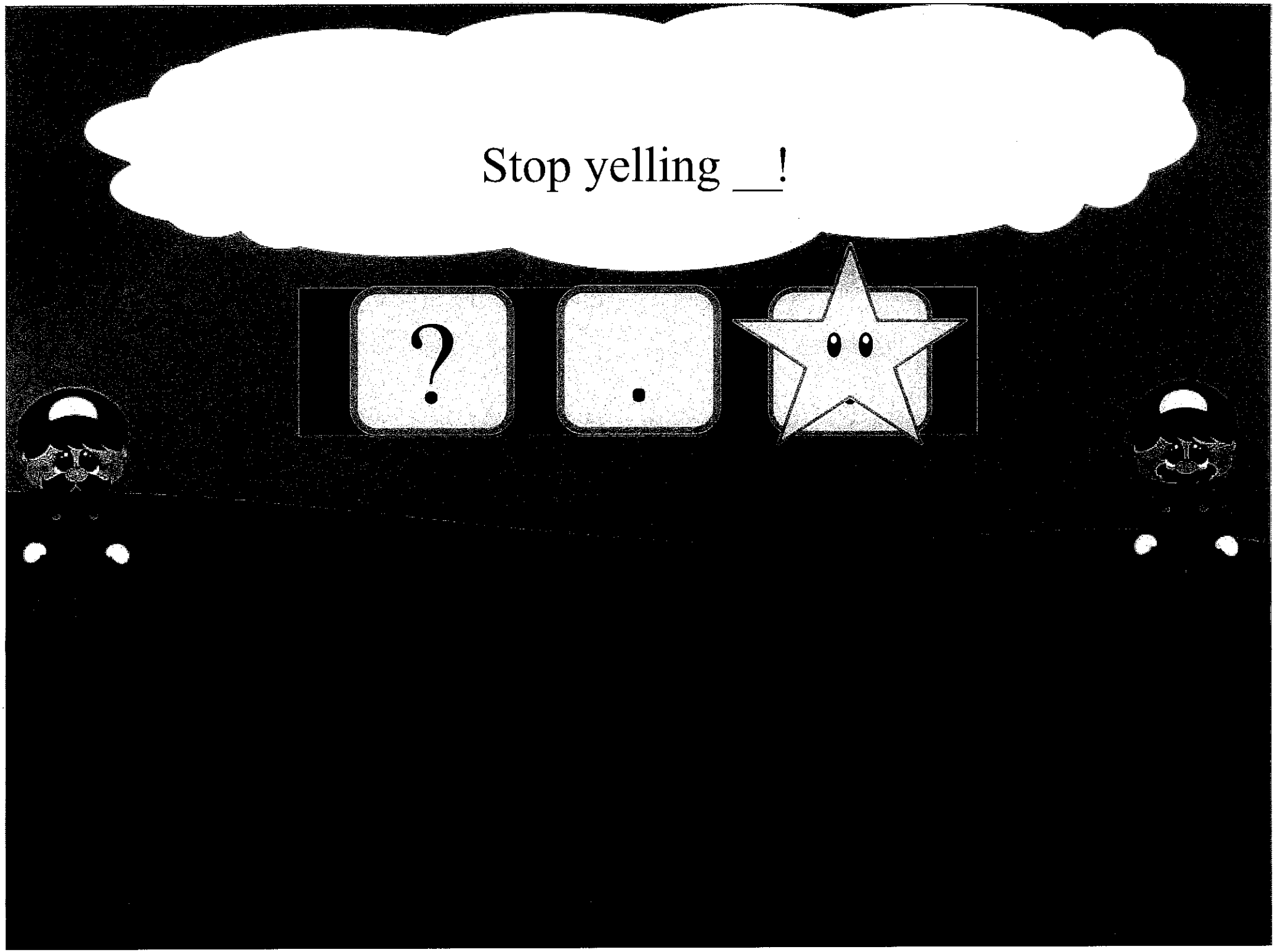

Can you help me find it__ ?

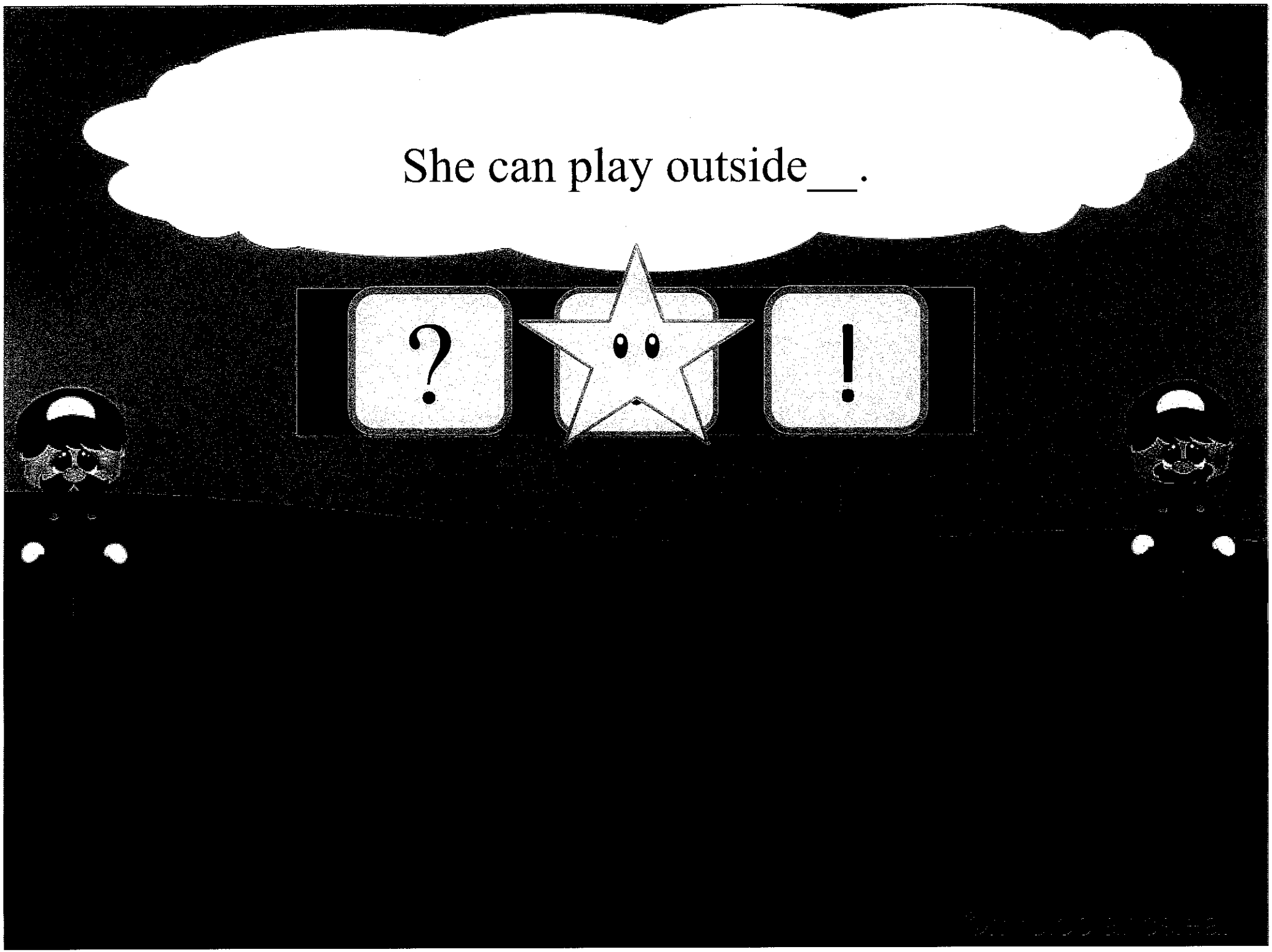
I like the princess__.

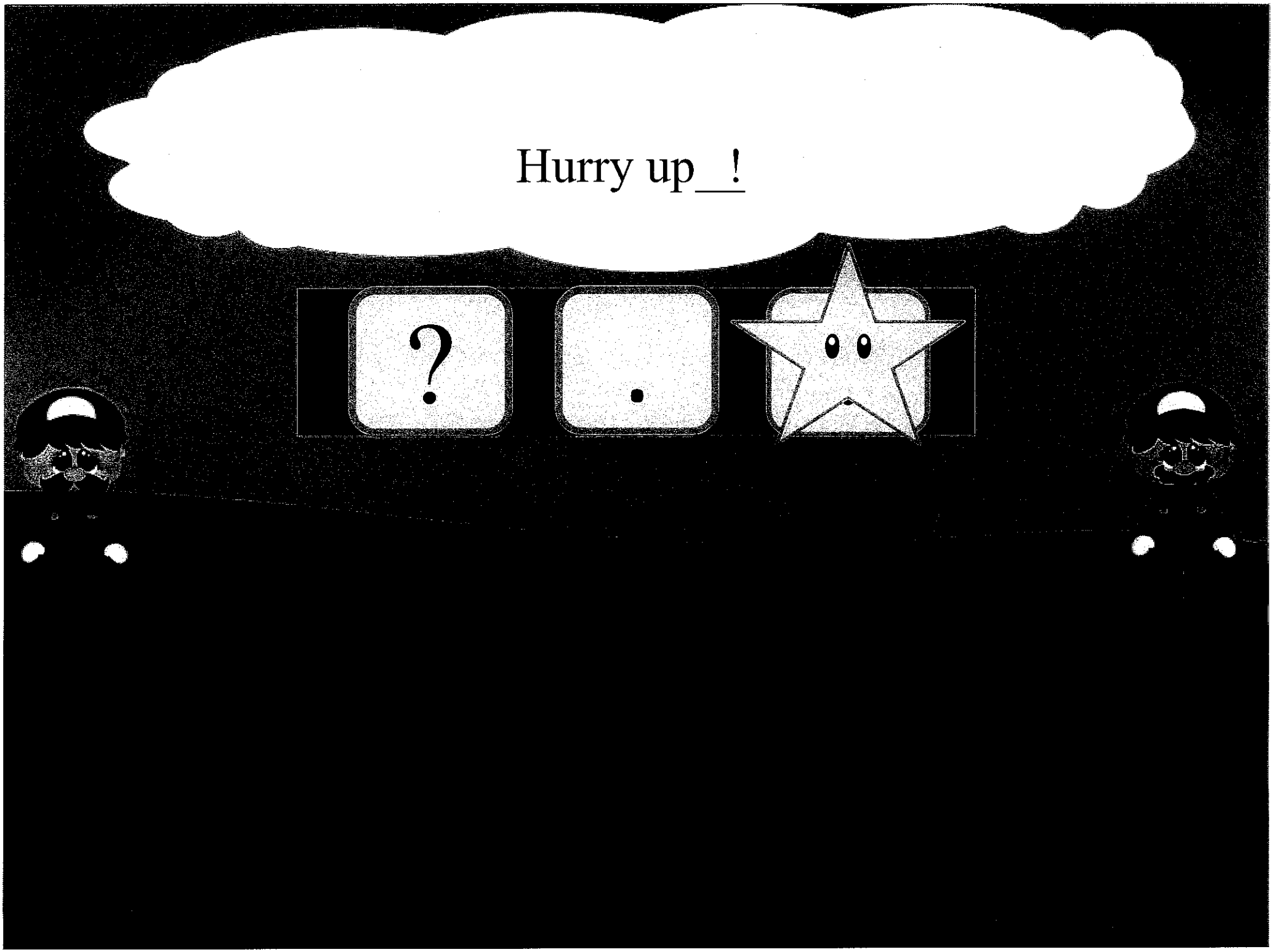


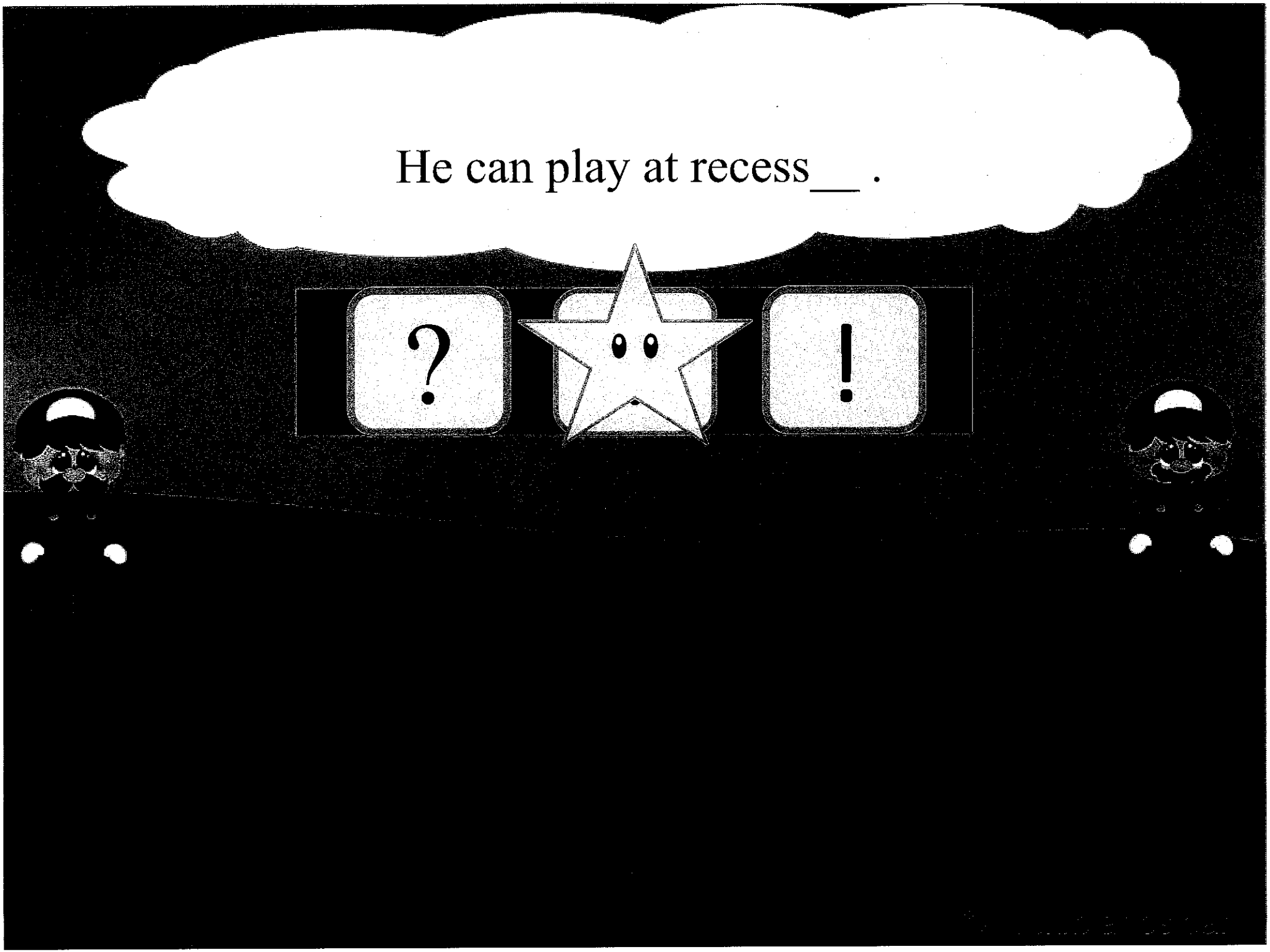

Where is she __?

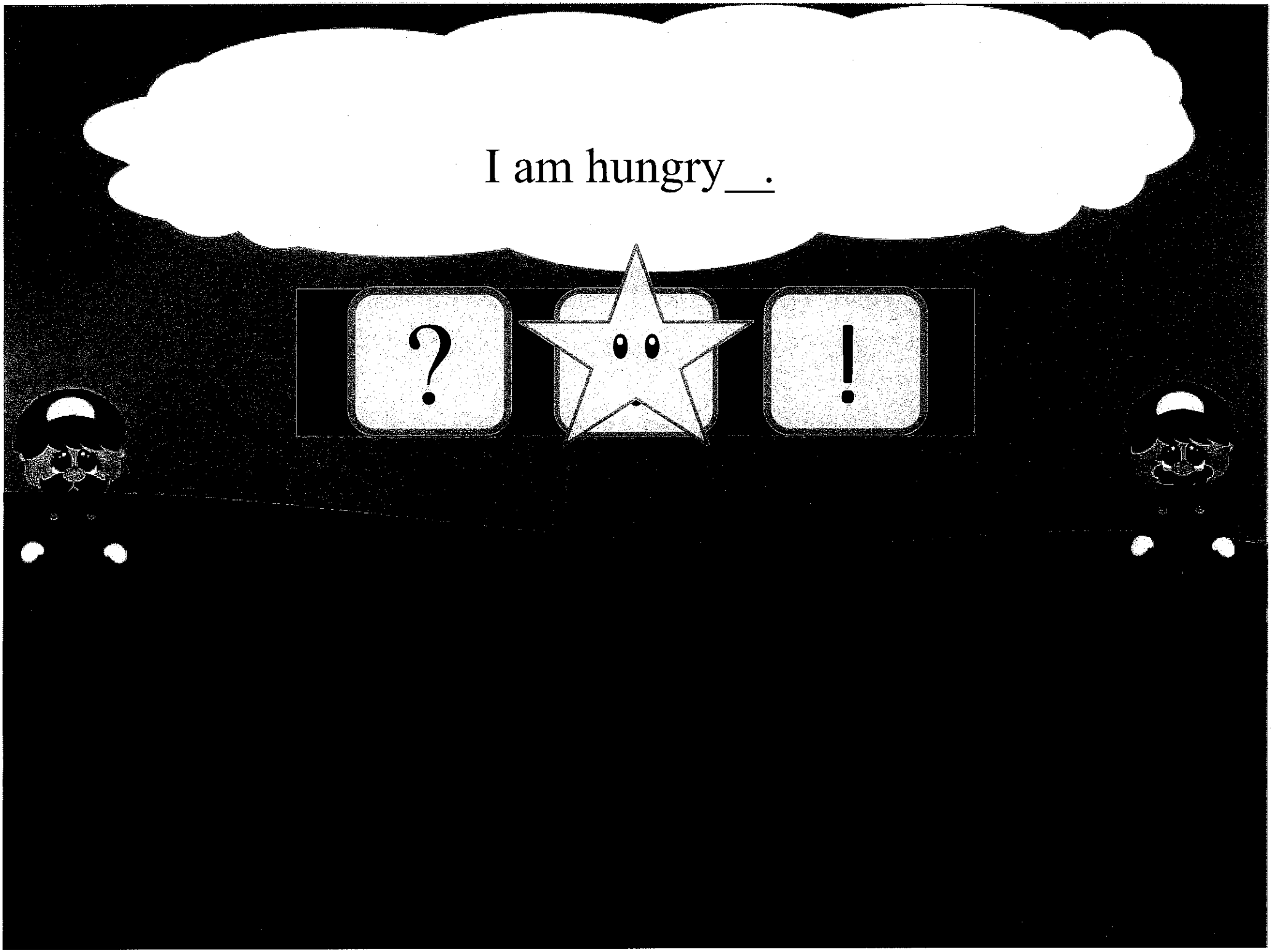

I want to eat lunch__ .
?
!

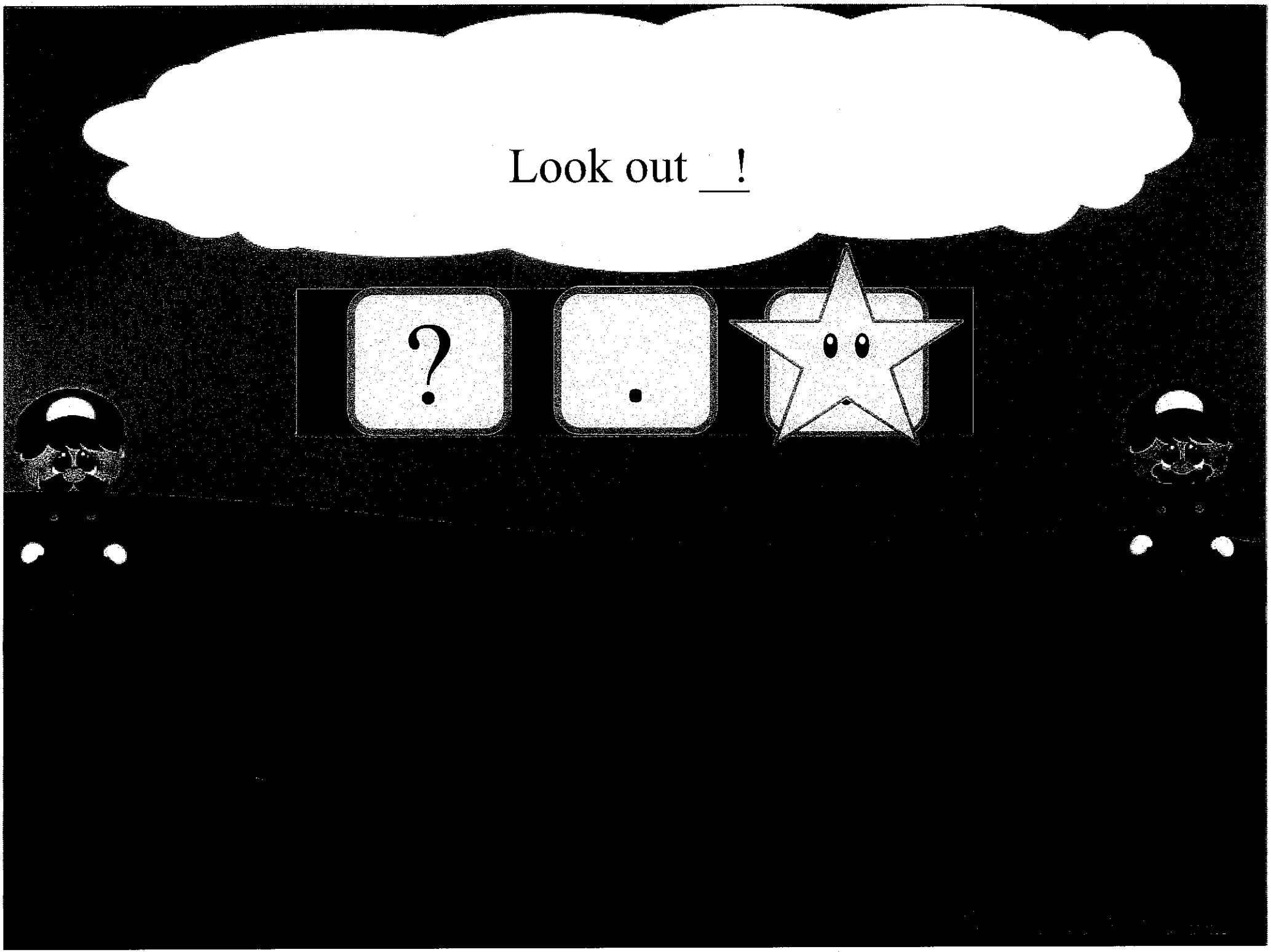

Stop yelling __!
?
.

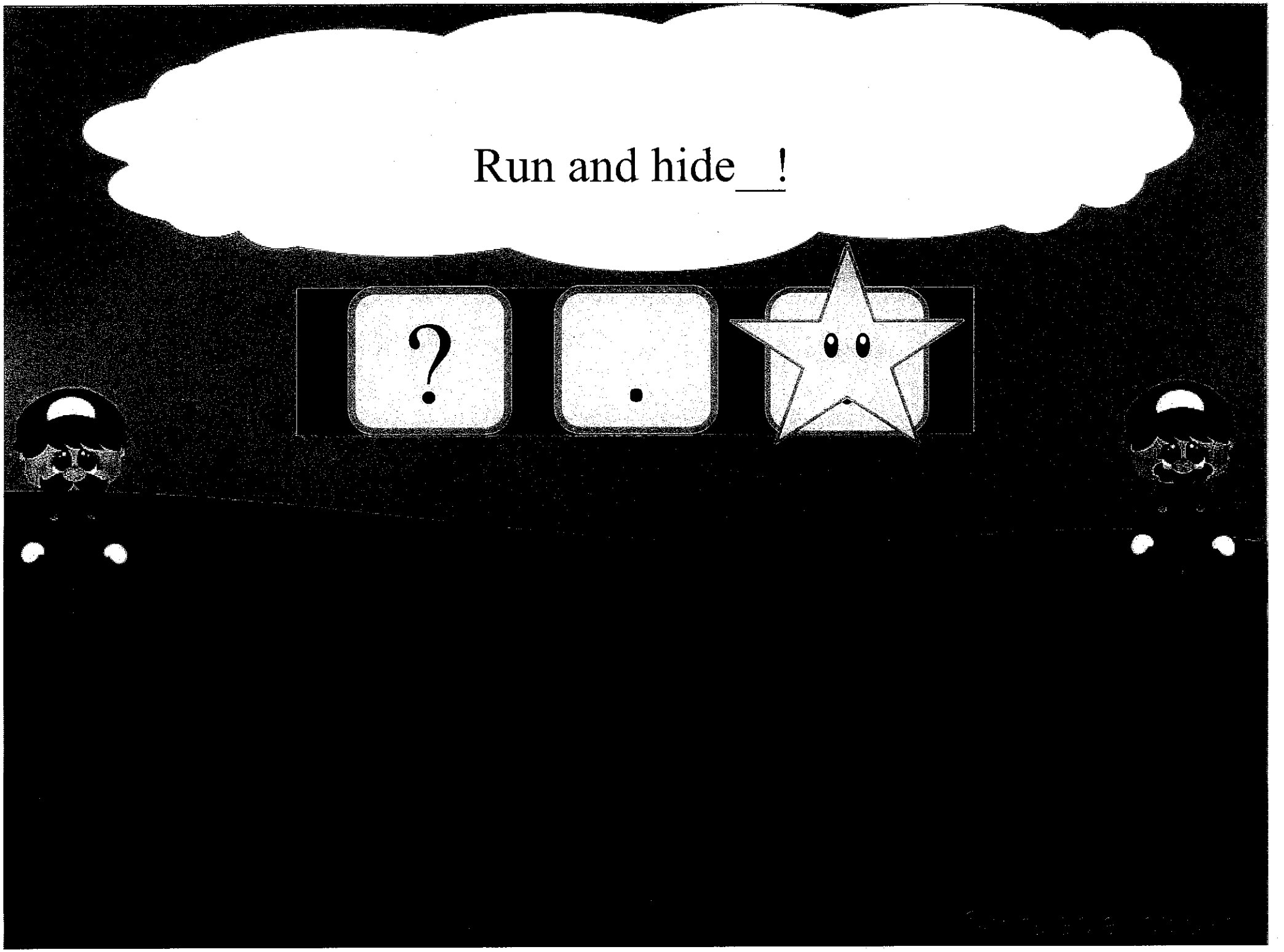

She can play outside__.
?
!

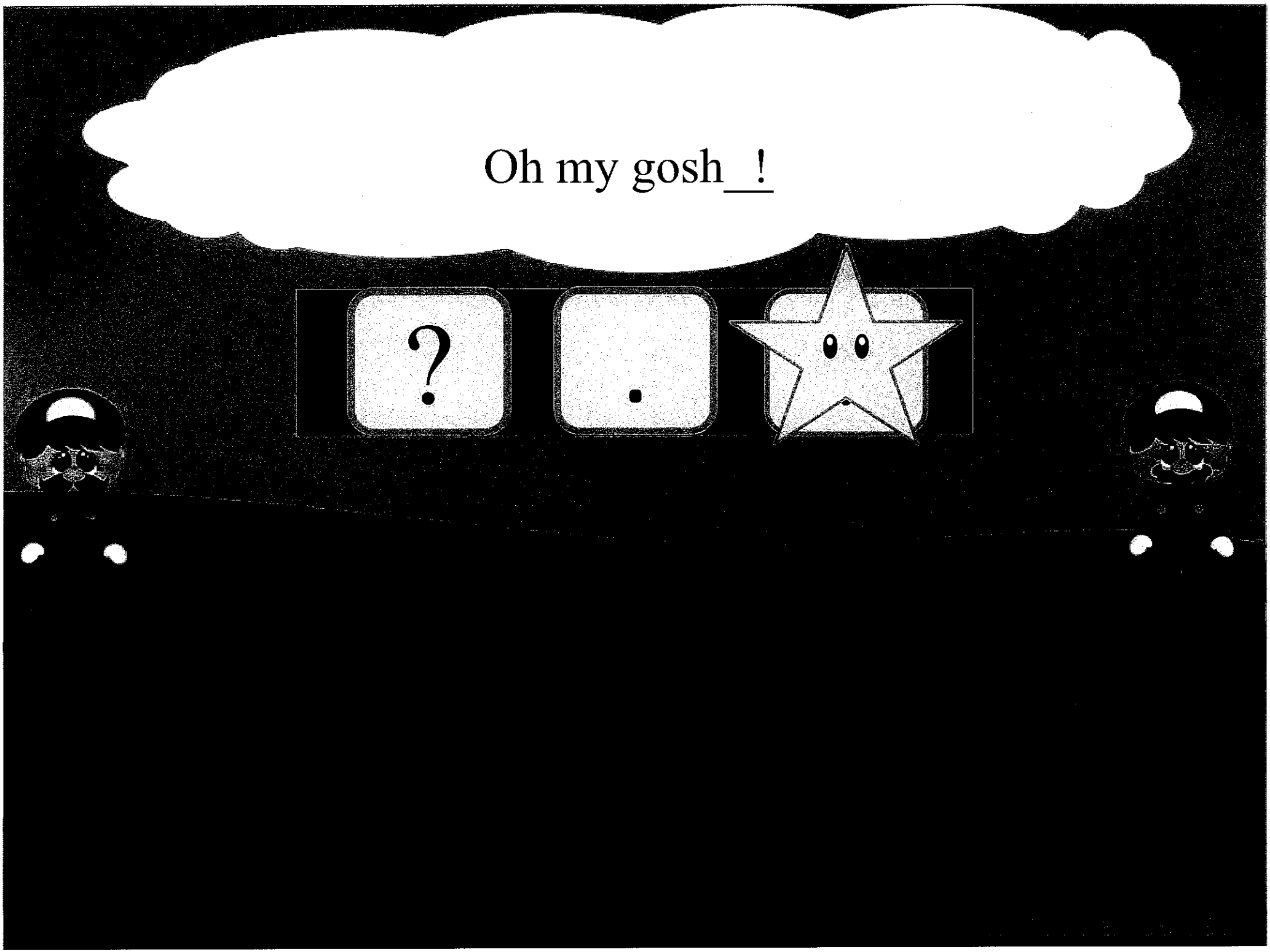

Hurry up_!
?
.


He can play at recess__ .
?
!


I am hungry__.
?
!


Look out __!
?
.


Run and hide__!
?
.


Oh my gosh_ !
?
.


The
END

CREDITS

Kristi W original artist and Cutsie Wootsie Designz

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Week 2 #3 Sequences Assignment

A sequence is a pattern made up of numbers. Each number in a sequence is called a term.

* Required

What is your name? *

Your answer

1.) The first term of a sequence is 19. The rule of the sequence is add 10. Find the next four terms of the sequence. * 1 point

- ◯ 20, 21, 22, 23
- ◯ 29, 30, 31, 32
- ◯ 29, 39, 49, 59
- ◯ 20, 30, 40, 50

2.) The first term of a sequence is 34. The rule of the sequence is add 7. Find the next four terms of the sequence. * 1 point

- ◯ 27, 20, 13, 6
- ◯ 28, 21, 14, 7
- ◯ 40, 47, 54, 61
- ◯ 41, 48, 55, 62

3.) The first term of a sequence is 56. The rule of the sequence is subtract 4. Find the next four terms of the sequence. * 1 point

- ◯ 50, 46, 42, 38
- ◯ 52, 48, 44, 40
- ◯ 60, 64, 68, 72
- ◯ 54, 50, 36, 32

4.) The first term of a sequence is 3. The rule of the sequence is multiply by 3. Find the next four terms of the sequence. * 1 point

- ◯ 3, 6, 9, 12
- ◯ 9, 18, 27, 35
- ◯ 9, 27, 81, 243
- ◯ 15, 18, 21, 24

5.) The first term of a sequence is 96. The rule of the sequence is divide by 2. Find the next four terms of the sequence. * 1 point

- ◯ 48, 24, 12, 6
- ◯ 94, 92, 90, 88
- ◯ 98, 100, 102, 104
- ◯ 48, 46, 44, 42

Submit

Chapter 7 Lesson 5

Addition and Subtraction Rules

Slide 1: Title

ESSENTIAL QUESTION

How are patterns used in mathematics?

Problem of the Day

How would you estimate to find the quotient of 83 ÷ 4?
Compare the estimate to the actual quotient.

Problem of the Day

How would you estimate to find the quotient of $83 \div 4$?
Compare the estimate to the actual quotient.

Sample answer: Round 83 to 80. The estimate is
$80 \div 4 = 20$. The actual quotient is 20 R 3.
The estimate and the actual quotient are very close.

Quick Check

1. The table shows how many bottles of juice were sold in the cafeteria each day.

Day	Number of Bottles
Monday	112
Tuesday	116
Wednesday	120
Thursday	124

Based on the pattern, how many bottles of juice will be sold on Friday?

Quick Check

1. The table shows how many bottles of juice were sold in the cafeteria each day.

Day	Number of Bottles
Monday	112
Tuesday	116
Wednesday	120
Thursday	124

Based on the pattern, how many bottles of juice will be sold on Friday?
128 bottles

Quick Check

2. Amelia baked 12 cupcakes on Wednesday, 24 cupcakes on Thursday, and 36 cupcakes on Friday. If the pattern continues, how many cupcakes will Amelia bake on Saturday?

Quick Check

2. Amelia baked 12 cupcakes on Wednesday, 24 cupcakes on Thursday, and 36 cupcakes on Friday. If the pattern continues, how many cupcakes will Amelia bake on Saturday?

   48 cupcakes

Quick Check

3. Test Practice Based on the pattern in the table below, how many songs will be on Disc 4?

Disc	Number of Songs
1	12
2	15
3	18
4	

A. 20 **B.** 21 **C.** 23 **D.** 25

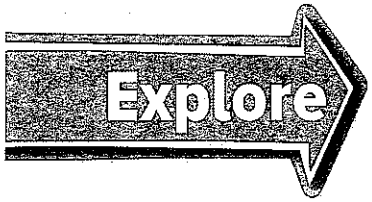
Quick Check

3. Test Practice Based on the pattern in the table below, how many songs will be on Disc 4?

Disc	Number of Songs
1	12
2	15
3	18
4	

A. 20 **B.** 21 **C.** 23 **D.** 25

INVESTIGATE the Math



How can you determine the relationship between numbers in a table?

INVESTIGATE the Math

Model

Determine the rule for the table below. Complete the table. Then write an equation that describes the pattern.

Input (x)	6	8	10	11	12	15	20	25
Output (y)	10		14		16	19		

Write an equation to describe the pattern using input (x) and output (y) _____ ◯ _____ = _____

INVESTIGATE the Math

Model

Determine the rule for the table below. Complete the table. Then write an equation that describes the pattern.

Input (x)	6	8	10	11	12	15	20	25
Output (y)	10	12	14	15	16	19	24	29

Write an equation to describe the pattern using input (x) and output (y) $x + 4 = y$

INVESTIGATE the Math

Extend

At a park near Liam's house, there is a pavilion that can be rented for parties. The rental cost is the number of hours rented multiplied by $8. Complete the table below. Then write an equation to represent the situation.

Input (h), Hours Rented	2	4	6	8
Output (d), Cost in Dollars				

Write an equation to describe the pattern using the hours rented (h) and cost in dollars (d). _____ ◯ _____ = _____

INVESTIGATE the Math

Extend

At a park near Liam's house, there is a pavilion that can be rented for parties. The rental cost is the number of hours rented multiplied by $8. Complete the table below. Then write an equation to represent the situation.

Input (h), Hours Rented	2	4	6	8
Output (d), Cost in Dollars	16	32	48	64

Write an equation to describe the pattern using the hours rented (h) and cost in dollars (d). $h \times 8 = d$

Real World Math in My World

Example 1

Mr. Mathis is creating a table to show how input numbers are changed. Write an equation that describes the pattern in the table. Complete the table.

Input (x)	Output (y)
2	9
4	11
6	13
8	
10	
12	

Pattern: $2 + \_\_\_\_ = 9$

$4 + \_\_\_\_ = 11$

$6 + \_\_\_\_ = 13$

Rule: Add ____.

Equation: $x + \_\_\_\_ = y$

Input Output

Use the rule to complete the table.

So, the equation that describes the pattern is _____.

Math in My World

Example 1

Mr. Mathis is creating a table to show how input numbers are changed. Write an equation that describes the pattern in the table. Complete the table.

Input (x)	Output (y)
2	9
4	11
6	13
8	**15**
10	**17**
12	**19**

Pattern: $2 + \mathbf{7} = 9$

$4 + \mathbf{7} = 11$

$6 + \mathbf{7} = 13$

Rule: Add **7**.

Equation: $x + \mathbf{7} = y$

Input Output

Use the rule to complete the table.

So, the equation that describes the pattern is $\boldsymbol{x + 7 = y}$.

Math in My World

Example 2

A pizza shop offers $3 off any order over $10. Use the rule and equation to find the next four output numbers.

Rule: Subtract 3.

Equation: $c - \$3 = d$

Input Output

Input (c)	Output (d)
$11	$8
$12	
$14	
$16	
$18	

Math in My World

Example 2 **A pizza shop offers $3 off any order over $10. Use the rule and equation to find the next four output numbers.**

Input (c)	Output (d)
$11	$8
$12	
$14	
$16	
$18	

Find the next four numbers when the input c is $12, $14, $16, and $18.

$c - \$3 = d$ $c - \$3 = d$ $c - \$3 = d$ $c - \$3 = d$

$\$12 - \$3 = \$\square$ $\$14 - \$3 = \$\square$ $\$16 - \$3 = \$\square$ $\$18 - \$3 = \$\square$

So, the next four amounts are _____.

Describe another pattern you see in this chart.

_____

_____

Math in My World

Example 2 **A pizza shop offers $3 off any order over $10. Use the rule and equation to find the next four output numbers.**

Find the next four numbers when the input c is \$12, \$14, \$16, and \$18.

Input (c)	Output (d)
\$11	\$8
\$12	**\$9**
\$14	**\$11**
\$16	**\$13**
\$18	**\$15**

$c - \$3 = d$ $c - \$3 = d$ $c - \$3 = d$ $c - \$3 = d$

$\$12 - \$3 = \$\boxed{9}$ $\$14 - \$3 = \$\boxed{11}$ $\$16 - \$3 = \$\boxed{13}$ $\$18 - \$3 = \$\boxed{15}$

So, the next four amounts are **\$9, \$11, \$13, and \$15**.

Describe another pattern you see in this chart.

Sample answer: When the input is even, the output is odd.

Guided Practice

1. Write an equation that describes the pattern.
Then use the equation to find the next three output numbers.

Input (a)	5	9	13	17	21	25
Output (b)	9	13	17			

Guided Practice

1. Write an equation that describes the pattern.
Then use the equation to find the next three output numbers.

Input (a)	5	9	13	17	21	25
Output (b)	9	13	17	**21**	**25**	**29**

$\boldsymbol{a + 4 = b}$

Talk MATH

Explain what you should do if you test a number in an equation and it does not work.

Independent Practice

Write an equation that describes the pattern. Then use the equation to find the next two output numbers.

2.

Input (m)	11	16	21	26	31
Output (n)	2	7	12		

Equation: _____

3.

Input (s)	2	6	10	14	18
Output (t)	15	19	23		

Equation: _____

Independent Practice

Write an equation that describes the pattern. Then use the equation to find the next two output numbers.

2.

Input (m)	11	16	21	26	31
Output (n)	2	7	12	**17**	**22**

Equation: $m - 9 = n$

3.

Input (s)	2	6	10	14	18
Output (t)	15	19	23	**27**	**31**

Equation: $s + 13 = t$

Independent Practice

Use the rule to find the next four output numbers.

4.

Rule: $f + 3 = h$	
Input (f)	Output (h)
3	6
6	
9	
12	
15	

5.

Rule: $v - 11 = w$	
Input (v)	Output (w)
16	5
22	
28	
34	
40	

6.

Rule: $g - 5 = h$	
Input (g)	Output (h)
14	9
19	
24	
29	
34	

Independent Practice

Use the rule to find the next four output numbers.

4.

Rule: $f + 3 = h$	
Input (f)	Output (h)
3	6
6	**9**
9	**12**
12	**15**
15	**18**

5.

Rule: $v - 11 = w$	
Input (v)	Output (w)
16	5
22	**11**
28	**17**
34	**23**
40	**29**

6.

Rule: $g - 5 = h$	
Input (g)	Output (h)
14	9
19	**14**
24	**19**
29	**24**
34	**29**

Independent Practice

Create an input/output table for each equation.

7. $y + 4 = z$

8. $a - 7 = c$

Independent Practice

Create an input/output table for each equation.

Sample answers:

7. $y + 4 = z$

Rule: $y + 4 = z$	
Input (y)	Output (z)
1	5
2	6
3	7
4	8
5	9

8. $a - 7 = c$

Rule: $a - 7 = c$	
Input (a)	Output (c)
8	1
9	2
10	3
11	4
12	5

Independent Practice

9. Describe a pattern you see in Exercise 2.

Independent Practice

9. Describe a pattern you see in Exercise 2.

The digit in the ones place alternates between 2 and 7.

Problem Solving

The table shows what a taxi company charges in dollars *c* for every *m* miles traveled.

Taxi Rates	
Input (*m*)	Output (*c*)
10	$12
15	$17
20	$22
25	
30	

10. Processes & Practices 2 **Use Algebra** Use the table to write an equation for this situation.

11. Find the costs of a 25-mile trip and a 30-mile trip.

12. Use the equation you wrote for Exercise 10 to find the cost of a 60-mile trip.

Problem Solving

The table shows what a taxi company charges in dollars *c* for every *m* miles traveled.

Taxi Rates	
Input (*m*)	Output (*c*)
10	$12
15	$17
20	$22
25	
30	

10. Processes & Practices 2 **Use Algebra** Use the table to write an equation for this situation.

$c = m + 2$

11. Find the costs of a 25-mile trip and a 30-mile trip.

$27; $32

12. Use the equation you wrote for Exercise 10 to find the cost of a 60-mile trip.

$62 = 60 + 2; $62

Problem Solving

The table shows what a taxi company charges in dollars *c* for every *m* miles traveled.

Taxi Rates	
Input (*m*)	Output (*c*)
10	$12
15	$17
20	$22
25	
30	

13. A different taxi company uses the equation $c = m + \$4$ to determine their charges. Find the cost of a 15-mile trip.

Problem Solving

The table shows what a taxi company charges in dollars *c* for every *m* miles traveled.

Taxi Rates	
Input (*m*)	Output (*c*)
10	$12
15	$17
20	$22
25	
30	

13. A different taxi company uses the equation $c = m + \$4$ to determine their charges. Find the cost of a 15-mile trip.

$19

Brain Builders

Processes & Practices 4

14. Model Math Write a real-world problem that can be represented by the table. Include the solution to your problem.

Input (h)	1	2	3	4	5
Output (m)	$10	$20	$30		

Brain Builders

14. **Processes & Practices** 4 **Model Math** Write a real-world problem that can be represented by the table. Include the solution to your problem.

Input (h)	1	2	3	4	5
Output (m)	$10	$20	$30		

Sample answer: A movie ticket costs $10. Sue buys 4 tickets. Joe buys 5 tickets. How much does each student pay? Sue: $40; Joe: $50

Brain Builders

15. **Building on the Essential Question** How can I find the rule of a pattern?

Brain Builders

15.  **Building on the Essential Question** How can I find the rule of a pattern?

Find the relationship between each input and output value.

MY Homework

Practice

Write an equation that describes the pattern. Then use the equation to find the next three output numbers.

1.

Input (a)	Output (b)
\$2	\$27
\$4	\$29
\$6	
\$8	
\$10	

Equation:

2.

Input (s)	Output (f)
87	76
80	69
73	
66	
59	

Equation:

MY Homework

Practice

Write an equation that describes the pattern. Then use the equation to find the next three output numbers.

1.

Input (a)	Output (b)
\$2	\$27
\$4	\$29
\$6	**\$31**
\$8	**\$33**
\$10	**\$35**

Equation: $a + \$25 = b$

2.

Input (s)	Output (f)
87	76
80	69
73	**62**
66	**55**
59	**48**

Equation: $s - 11 = t$

Homework Practice

Write an equation that describes the pattern. Then use the equation to find the next three output numbers.

3.

Input (x)	Output (y)
22	17
26	21
30	
34	
38	

Equation: _____

4.

Input (c)	Output (d)
0	8
5	13
10	
15	
20	

Equation: _____

Homework Practice

Write an equation that describes the pattern. Then use the equation to find the next three output numbers.

3.

Input (x)	Output (y)
22	17
26	21
30	**25**
34	**29**
38	**33**

Equation: $x - 5 = y$

4.

Input (c)	Output (d)
0	8
5	13
10	**18**
15	**23**
20	**28**

Equation: $c + 8 = d$

MY Homework

Brain Builders

Jeremy's class is going on a field trip. The school will bring all the students who are there that day plus 4 chaperones.

5. Write an equation for this situation. Explain how your equation relates to the given information.

Input (s)	Output (p)

6. Processes & Practices 5 **Use Math Tools** Complete the table to show how many people will go if there are 25, 27, 29, 31, or 33 students. Explain how you can check your answer.

Homework

Brain Builders

Jeremy's class is going on a field trip. The school will bring all the students who are there that day plus 4 chaperones.

5. Write an equation for this situation. Explain how your equation relates to the given information.

$s + 4 = p$ The total number of people, p, is 4 more than the number of students, s.

6. Processes & Practices 5 **Use Math Tools** Complete the table to show how many people will go if there are 25, 27, 29, 31, or 33 students. Explain how you can check your answer.

The values in the output column should be 4 more than the values in the input column.

Input (s)	Output (p)
25	29
27	31
29	33
31	35
33	37

Vocabulary Check

Draw a line to match each word to its meaning.

7. input	• a number before an operation is performed
8. output	• a number that is the result of an operation

Vocabulary Check

Draw a line to match each word to its meaning.

7. input ——— • a number before an operation is performed

8. output ——— • a number that is the result of an operation

Homework

Brain Builders

9. Test Practice Refer to the equation $a - 6 = b$. If $a = 45$, what is the value of b?

Ⓐ 16 Ⓑ 39 Ⓒ 51 Ⓓ 60

Homework

Brain Builders

9. Test Practice Refer to the equation $a - 6 = b$. If $a = 45$, what is the value of b?

Ⓐ 16 ● 39 Ⓒ 51 Ⓓ 60

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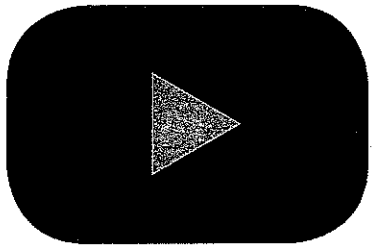
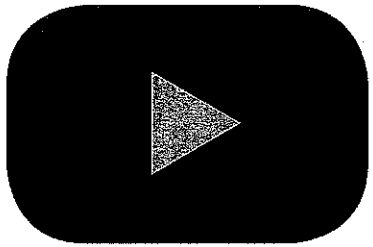


Please log into ConnectED to view this video.



Name _____ Date _____

Lesson 5 Reteach

Addition and Subtraction Rules

Some math problems contain a pattern. Once you find the pattern, you can make a rule that will solve the problem for any input.

Use this problem to learn more about finding a pattern and making a rule.

> **No matter how many cards Liz has, James always has five more cards.**

This problem tells you the rule: Liz's cards + 5 = James's cards. If Liz has 15 cards, how many cards will James have?
James will have 15 + 5, or 20 cards.

Suppose the problem did not give you the rule.

Liz's Cards Input (x)	James's Cards Output (y)
3	8
5	10
7	?
9	?

Step 1 Identify the pattern: 3 + __ = 8
5 + __ = 10
The pattern is to add 5 to each number. The rule is + 5.

Step 2 Use the rule to write an equation.
$x + 5 = y$
So, the next numbers in the table are 12 and 14.

Write an equation that describes the pattern. Then use the equation to find the next 3 numbers in the pattern.

1.

Rule:	
Input (*d*)	Output (*e*)
4	8
8	12
12	
16	
20	

2.

Rule:	
Input (*j*)	Output (*k*)
2	11
5	14
8	
11	
14	

Name _____ Date _____

Lesson 5 Reteach

Addition and Subtraction Rules

Some math problems contain a pattern. Once you find the pattern, you can make a rule that will solve the problem for any input.

Use this problem to learn more about finding a pattern and making a rule.

> **No matter how many cards Liz has, James always has five more cards.**

This problem tells you the rule: Liz's cards + 5 = James's cards. If Liz has 15 cards, how many cards will James have?
James will have 15 + 5, or 20 cards.

Suppose the problem did not give you the rule.

Liz's Cards Input (x)	James's Cards Output (y)
3	8
5	10
7	?
9	?

Step 1 Identify the pattern: 3 + __ = 8
5 + __ = 10
The pattern is to add 5 to each number. The rule is + 5.

Step 2 Use the rule to write an equation.
$x + 5 = y$
So, the next numbers in the table are 12 and 14.

Write an equation that describes the pattern. Then use the equation to find the next 3 numbers in the pattern.

1.

Rule: $d + 4 = e$	
Input (d)	Output (e)
4	8
8	12
12	**16**
16	**20**
20	**24**

2.

Rule: $f + 9 = k$	
Input (f)	Output (k)
2	11
5	14
8	**17**
11	**20**
14	**23**

Slide R2: Reteach Page 59 Answers

Name _____ Date _____

Lesson 5 Enrich

Addition and Subtraction Rules

Continue each pattern. Then write the function that makes it work. Here is an example.

0, 5, 10, 15, 20, 25, 30

The function is $x + 5$.

1. 3, 9, 15, 21, _____, _____, _____

The function is _____.

2. 72, 68, 64, 60, _____, _____, _____

The function is _____.

3. 39, 49, 59, 69, _____, _____, _____

The function is _____.

4. 28, 35, 42, 49, _____, _____, _____

The function is _____.

5. 81, 72, 63, 54, _____, _____, _____

The function is _____.

6. 25, 33, 41, 49, _____, _____, _____

The function is _____.

Make your own pattern.

7. _____, _____, _____, _____, _____, _____, _____

The function is _____.

8. _____, _____, _____, _____, _____, _____, _____

The function is _____.

Name _____ Date _____

Lesson 5 Enrich

Addition and Subtraction Rules

Continue each pattern. Then write the function that makes it work. Here is an example.

0, 5, 10, 15, 20, 25, 30
The function is $x + 5$.

1. 3, 9, 15, 21, 27, 33, 39
The function is $x + 6$.

2. 72, 68, 64, 60, 56, 52, 48
The function is $x - 4$.

3. 39, 49, 59, 69, 79, 89, 99
The function is $x + 10$.

4. 28, 35, 42, 49, 56, 63, 70
The function is $x + 7$.

5. 81, 72, 63, 54, 45, 36, 27
The function is $x - 9$.

6. 25, 33, 41, 49, 57, 65, 73
The function is $x + 8$.

Make your own pattern. 7–8 See students' work.

7. _____, _____, _____, _____, _____, _____, _____
The function is _____.

8. _____, _____, _____, _____, _____, _____, _____
The function is _____.

Slide E2: Enrich Page 52 Answers

Week 2 #9 Addition and Subtraction Rules Assignment

Some math problems contain a pattern. Once you find the pattern, you can make a rule that will solve the problem for any input.

* Required

What is your name? *

Your answer

1.) Write an equation that describes the pattern. * 1 point

Input (a)	8	12	16	20	24	28
Output (b)	11	15	19			

- ◯ a + 3 = b
- ◯ a + b = 3
- ◯ a − 3 = b
- ◯ a + 4 = b

2.) Write an equation that describes the pattern. * 1 point

Input (a)	7	10	13	16	19	22
Output (b)	9	12	15			

- ◯ a + 2 = b
- ◯ a + b = 2
- ◯ a − 2 = b
- ◯ a + 3 = b

3.) Write an equation that describes the pattern. * 1 point

Input (m)	12	17	22	27	32	37
Output (n)	8	13	18			

- ◯ m - 5 = n
- ◯ m + 4 = n
- ◯ m + 5 = n
- ◯ m − 4 = n

4.) Write an equation that describes the pattern. * 1 point

Input (m)	20	30	40	50	60	70
Output (n)	15	25	35			

- ◯ m - 10 = n
- ◯ m − 5= n
- ◯ m + 5 = n
- ◯ m + 10 = n

5.) Find the next three numbers in the pattern. * 1 point

Input (m)	60	50	40	30	20	10
Output (n)	50	40	30			

- ◯ 20, 30, 40
- ◯ 60, 50, 40
- ◯ 20, 10, 0
- ◯ 20, 15, 10

6.) Write an equation that describes the pattern. Then use the equation to find the next two numbers in the table. * 2 points

Input (*e*)	4	6	8	10	12
Output (*f*)	16	24	32		

- ◯ e ÷ 4 = f; 14, 16
- ◯ e ÷ 4 = f; 40, 48
- ◯ e × 4 = f; 14, 16
- ◯ e × 4 = f; 40, 48

7.) Write an equation that describes the pattern. Then use the equation to find the next two numbers in the table. * 2 points

Input (*a*)	5	8	11	14	17
Output (*b*)	8	11	14		

- ◯ a + 3 = b; 17, 20
- ◯ a - 3 = b; 17, 20
- ◯ a - 3 = b; 11, 14
- ◯ a + 3 = b; 11, 14

8.) Write an equation that describes the pattern. Then use the equation to find the next two numbers in the table. * 2 points

Input (*e*)	3	5	7	9	11
Output (*f*)	9	15	21		

- ◯ e × 3 = f; 12, 14
- ◯ e ÷ 3 = f; 12, 14
- ◯ e × 3 = f; 27, 33
- ◯ e ÷ 3 = f; 27, 33

9.) Write an equation that describes the pattern. Then use the equation to find the next two numbers in the table. * 2 points

Input (*a*)	5	9	13	17	21
Output (*b*)	9	13	17		

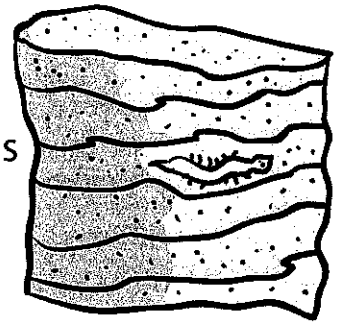
- ◯ a + 4 = b; 17, 21
- ◯ a - 4 = b; 17, 21
- ◯ a - 4 = b; 21, 25
- ◯ a + 4 = b; 21, 25

Submit

TYPES OF ROCKS

Did you know there are different types of rocks?

Sedimentary Rock

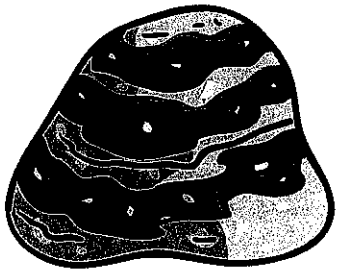


This type of rock is made out of sand, shells, pebbles and other materials. Together, these particles are "sediment". Slowly the sediment gathers up in layers. Over time it turns into rock! Fossils are usually found in this type of rock.

Can you think of a place where this type of rock can be found?

_____

Metamorphic Rock

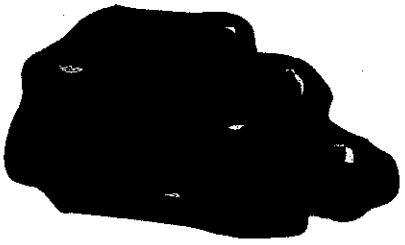


This type of rock is made beneath the surface of the earth. It has ribbon-like layers, caused by the heat. Some of these rocks have shiny crystals on them.

Can you think of a place where this type of rock can be found?

_____

Igneous Rock



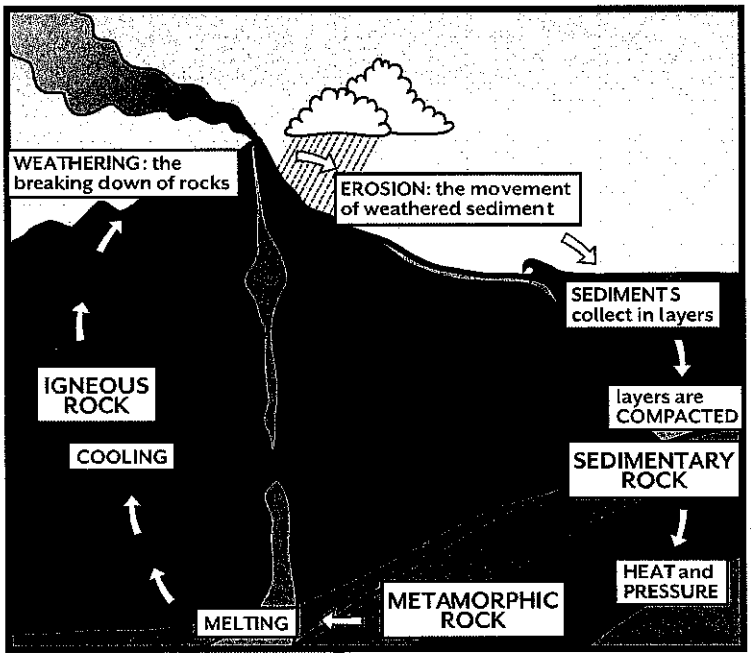
This type of rock is made from the lava of a volcano. Deep inside the earth, rocks are melted and become magma. When magma comes out of the volcano, it is called lava. If the lava cools quickly, it will make a smooth and shiny rock. If the lava cools slowly, it will form a rock with tiny holes and gas bubbles in it.

Can you think of a place where this type of rock can be found?

_____

What is the rock cycle?

The **rock cycle** is a gradual process of movement and change that constantly reshapes our landscape. Processes on and within Earth—including weather, pressure and temperature—cause rocks to break down, melt and solidify over and over. Rocks change from one form to another, but are never destroyed.



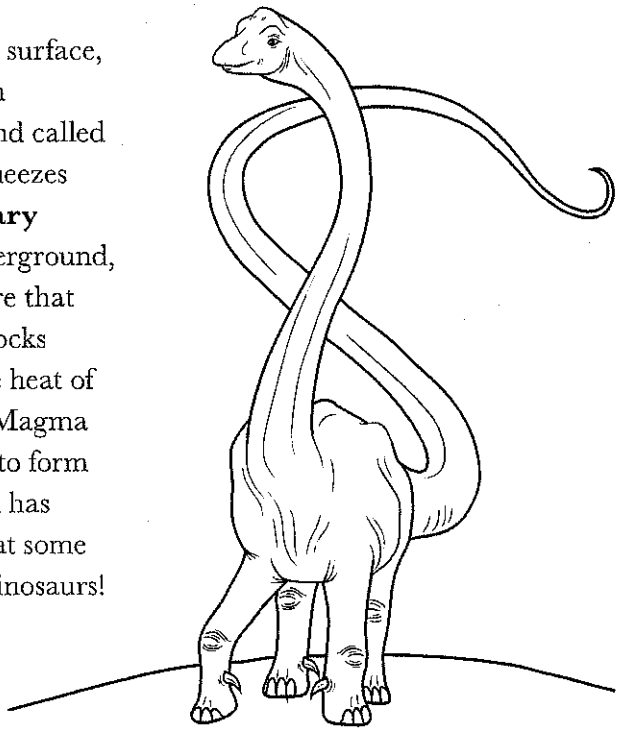
The Three Types of Rock:

Sedimentary rocks are made from layers of sediment.

Metamorphic rocks are formed under extreme heat and pressure.

Igneous rocks are melted rock that has cooled and hardened.

Processes within the earth push rocks up to the surface, where they're broken down and moved through **weathering** and **erosion**. Bits of rock and sand called **sediment** are deposited in layers. Pressure squeezes the layers and they solidify to form **sedimentary rock**. These rocks gradually move deeper underground, where they encounter extreme heat and pressure that transforms them into **metamorphic rock**. Rocks that are pushed even deeper toward the intense heat of Earth's mantle will melt and become magma. Magma that reaches Earth's surface cools and hardens to form **igneous rock**. This constant recycling of rock has occurred for millions of years, which means that some rocks have been around since the time of the dinosaurs!



Week 2 #3 How are rocks classified?

Please answer the questions using the material provided.

* Required

What is your name? *

Your answer

The three types of rocks are called? * 1 point

- ◯ Minerals, pebbles, and sand
- ◯ Crystals, shells, and fossils
- ◯ Sedimentary, Igneous, and Metamorphic

What is the rock cycle? * 1 point

- ◯ The process of rocks being destroyed
- ◯ The process of rocks changing from one form to another
- ◯ The process of rocks being created from soil

Which three processes causes rocks to break down, melt, and solidify over and over? 1 point

- ◯ Eruption, heating, and cooling
- ◯ Weather, pressure, and temperature
- ◯ None of the above

Which type of rocks are made from lava? * 1 point

Your answer

Fossils can be found in which type of rocks? * 1 point

Your answer

Which type of rocks are made beneath the surface? * 1 point

Your answer

Are rocks ever destroyed? * 1 point

Choose

Submit