

Mike Mulligan and His Steam Shovel Unit Study & Lapbook

Book by Virginia Lee Burton

Lessons and printables by Wende, Ami, and Tamara

Science

Energy –

Energy is the ability to do work. There are several kinds of energy. You can't see energy, only what energy does. Steam is a source of mechanical energy. Maryanne works due to steam energy. Steam engines have been used for over a hundred years. A boiler has a large tank that holds water and a furnace that burns fuel such as coal, oil, or wood to heat the water. As the water heats up and boils, it turns into a gas called steam. As the water turns to steam, it builds up pressure that can be used to turn wheels called steam turbines. Steam turbines are used to move ships, trains, and diggers, and to run generators that make electricity. Over time, people thought that gasoline, electricity, and diesel fuel were more efficient sources of energy. Today, even more sources of energy are used, including wind, solar, and nuclear. Maybe someday those gas, electric, and diesel diggers that took Maryanne's job will themselves become obsolete!

States of Matter —

Read the poem below with your student and discuss matter with your student. Matter is an thing that weighs something and takes up space.

What's the Matter? by Tom McGowen

What's the matter, do you ask?

I'll tell you right away.

It's *everything around you*, as
you work or sleep, or play.

A chair is matter, a table, too,
and so is a rock or tree.

A cloud, a star, a blade of grass,
a raindrop, a bumblebee.

The earth is matter, so is the sea,
and the sky is matter, too.
(Of course what matters most of all
is the matter that is *you!*)

There's matter almost everywhere,
except in one special place--
the vast, black, lonely *emptiness*,
that we call outer space.

There are three states of matter: solid, liquid, and gas.

Liquids can move freely. Get a cup of water. Show your student how the water takes the shape of its container. That's what liquids do! Experiment with some liquids and watch them take the shape of their containers.

A solid has its own shape and does not flow. Can your student name some solids? What does your student think the solid form of water is?

Get a piece of ice and melt it. You just turned a solid into a liquid!

A gas flows and does not have a shape; it can spread freely! Can you turn a liquid into a gas? What about the water? How can it be turned into a gas? By heating it! Heat some water and watch some steam emerge from the pot. Remind your student that steam is the kind of energy that kept Mary Anne moving!

Character and Bible

Being Faithful –

On the back cover, it is said that “Mike Mulligan remains faithful to his steam shovel, Maryanne.” Does your child understand what being faithful means? Being faithful is having a constant loyalty to the performance of duties. It includes trustworthiness and dedication. Mike is faithful to Maryanne through thick and thin. He takes good care of her, looks out for her, and it is even said that he loves her. Who exhibits these characteristics in your child's life? Your child may say, you, his parent, but there is someone even more faithful.

Deuteronomy 7:9 says:

Know therefore that the Lord thy God, he is God, the faithful God, which keepeth covenant and mercy with them that love him and keep his commandments to a thousand generations;

God will always take care of, look out for, and love those who love him and keep his commandments. You'll find none more faithful!

Working for the Lord —

On page 13 the book mentions that Mike and Mary Ann did better work when people were watching. Sometimes it's easier to your best when people are watching, but remember: God is always watching. Read and discuss Galatians 1:10 with your student. "Am I now trying to win the approval of human beings, or of God? Or am I trying to please people? If I were still trying to please people, I would not be a servant of Christ." Another verse to discuss is I Corinthians 10:31, "So whether you eat or drink or whatever you do, do it all for the glory of God."

Use the matchbooks as desired.

Geography

Landforms —

Mike Mulligan and Mary Anne encounter various landforms while they are working including a body of water, high mountains, and hills. Rivers, lakes, mountains, hills — these are all landforms. A landform is a ***natural*** formation of land: caves, peninsulas, valleys, plains, islands, etc.

Can your student think of any landforms where you live? In your state? That she has seen while travelling?

Mike Mulligan and Mary Anne use their services to change landforms. Why?
(They needed to smooth the plains, make a canal, may way for trains and roads.)

Learn about various landforms (cards provided). Show your student images of each type of landform, and ask your student to draw an illustration on the front of each card.

Language Arts

Plot –

Plot is the action in a story. It includes events, which build and grow as the story develops. There are five basic elements that make up a plot line. Discussing these elements is sufficient at this stage in learning, to help your child become familiar with the terms.

1. **Exposition** helps the reader to understand the background or situation in which the story is set. It reveals the setting, main characters, and information that the reader will need to understand the rest of the plot. This is revealed in pages 3 to 13 of our story.
2. **Rising Action** is the series of conflicts that build towards a climax. The conflict in the story involves Mary Anne becoming obsolete, and then trying to prove herself, in pages 14 to 21.
3. **Climax** is the high point or turning point in the story, usually the most intense part. What does your child think is the most intense part of the story? Aren't pages 22 through 35 exciting, as Mike and Maryanne dig their hole in record time?
4. **Falling Action** is the action in the story that works out the decision arrived at during the climax. It ends with the resolution. On pages 36 to 41 the action falls, as the community decides what to do with Mike and Maryanne now that they are stuck in the hole.
5. **Resolution** is the portion of the story where the problem is solved, and is intended to bring the story to a satisfactory end. Ask your child to identify the resolution. Does he think it comes to a satisfactory ending?

Personification –

Personification is a literary device in which the author gives an animal, object, or idea the qualities of a person. Sometimes this is done through the text, and other times it is done through the illustrations. Have your child look and listen to identify the use of personification in *Mike Mulligan*. In this story, the author Virginia Lee Burton gives human characteristics to the steam shovel. She gave the steam shovel a name, Mary Anne, gave her feelings of sadness, and in the illustrations gave her facial expressions. If you have read other Virginia Lee Burton stories, you'll notice she uses personification throughout most of her books.

Let your student choose a page of objects (in the printables section) to personify. Write the personifications on the back of the cards. To extend this lesson, let your student choose one card to write more about. Use the "Personifying a Character" activity page for this lesson extension.

Copywork —

Encourage your student to complete the copywork page in his very best handwriting. If your student is older, ask him to choose a passage from the story that he wants to copy on to his own paper.

Onomatopoeia –

When words are written similar to the sounds they make it is called onomatopoeia. You'll find examples on pages 28 and 32 of our story. These words are most fun when read out loud. Clang! Bing! Bang! Crash! Slam! Do you think they sound like a steam shovel hard at work? Have your child listen to mom or dad at work (hammering a nail in the wall, putting dishes away, etc.), and try to write out the sound he hears phonetically.

Newspaper Article —

How did Mike and Mary Anne find out that the town of Popperville was going to build a new town hall? They read it in the newspaper. Using the printable page (you can type right on it!), write an article about Popperville building a new town hall, or write an article about Mike and Mary Anne building the town hall (narrate the story).

Building Words — (reading and spelling practice)

Using Scrabble Tiles, [alphabet stamps](#), [magnetic alphabet tiles](#), or another manipulative of your choice, build the words! After your student has built the words a few times, see if she recognizes them in the story. Let her read them to you!

Math

Story Problems —

Ask your student to solve the story problems about Mike Mulligan and Mary Anne.

Just for Fun

Construction Vehicles —

Learn the names of the various construction vehicles with the Construction Vehicles coloring book.

Make a nice hot apple pie!

Dig!

If your student loves to dig, find some ways to let him do that. You might want to purchase a dino dig, or hide little treasures in a sandbox. You could even hide something on your property, make a treasure map, and let him dig to find it. You could even bake a chocolate cake or pan of brownies, and let your student dig a cellar!

Island

an area of land
completely surrounded
by water

River

a large stream of water
that flows into a lake or
ocean

Delta

a triangular deposit of
sand and soil that
collects at the
mouth of a river

Mountain

a landform with high
elevation and a pointed
or rounded top higher
than a hill

Channel

a narrow or deep
waterway connecting
two bodies of water

Lake

a large body of water
surrounded by land

Archipelago

a group of many islands

Mountain Range

a row of connected
mountains

Plain

a broad and flat or
gently rolling area
usually low in elevation

Peninsula

land surrounded
by water on all
sides but one

Valley

low land found
between hills or
mountains

Hill

a natural elevation of
the earth's surface;
smaller than a mountain

Directions: Cut each strip out as one piece. Glue tab as indicated. Fold like an accordion. Glue back of last piece to your lapbook. Glue one resource picture to each piece.

Glue this tab to the back of the first section of the next strip.

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Types
of
Energy

Cut out pictures. Glue them into your accordion book and write a one word description for each kind of energy: gas, solar, wind, steam.


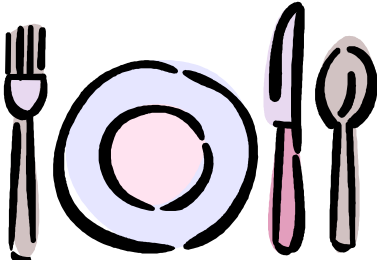





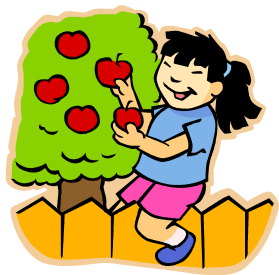
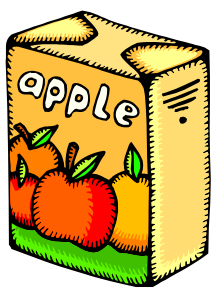
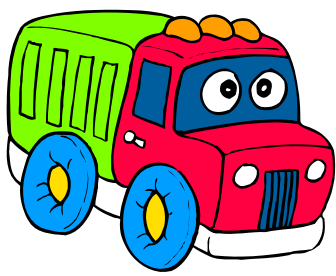
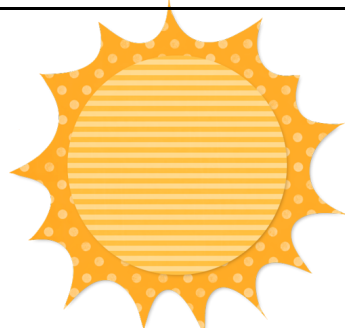


Three States of Matter

Solid	Liquid	Gas

Sorting Cards

After you complete the lesson on the three states of matter, cut out these cards. Discuss them with your student as he uses the previous page to sort them: solid, liquid, gas. When you are finished, have your student glue them under the correct categories.

 stars	 ice	 dishes
 water	 milk	 cloud
 rain	 steam	 apple
 apple juice	 toy	 sun

Cut books out. Fold on lines (matchbook style)

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Faithfulness



Working for the Lord



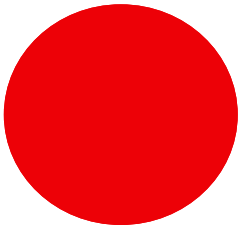
Mike Mulligan takes good care of Mary Anne!
What should I take good care of?



MIKE MULLIGAN AND HIS STEAM SHOVEL

Mike Mulligan and Mary Anne had been digging together for years and years.

Mike Mulligan
and Mary Anne
had been digging
together for
years and years.



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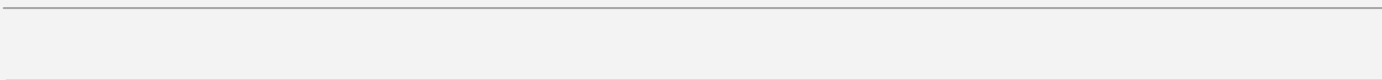


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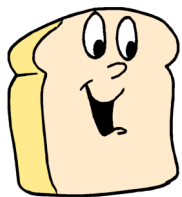
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	Climax	
	Rising Action	Falling Action
Exposition		Resolution

Cut on solid lines. Mountain fold on dotted line. Under each flap, have child describe this element of the story.
Young children may prefer to draw a picture, if desired.



Personifying a Character

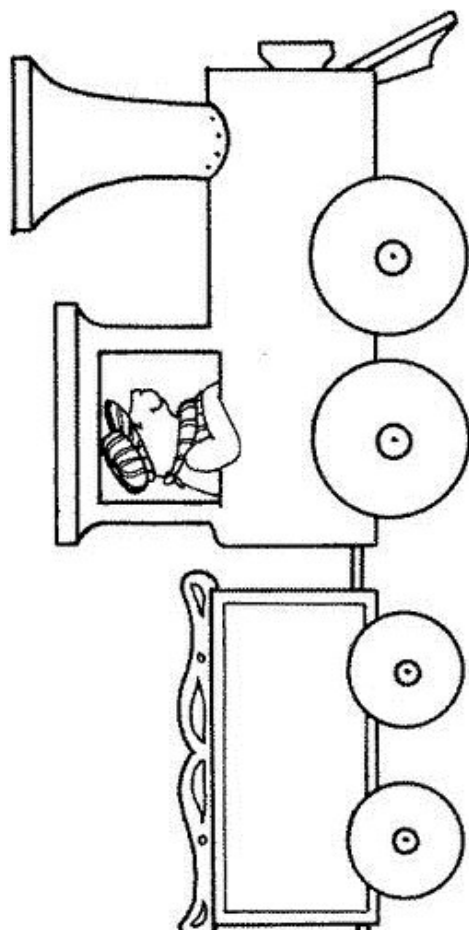
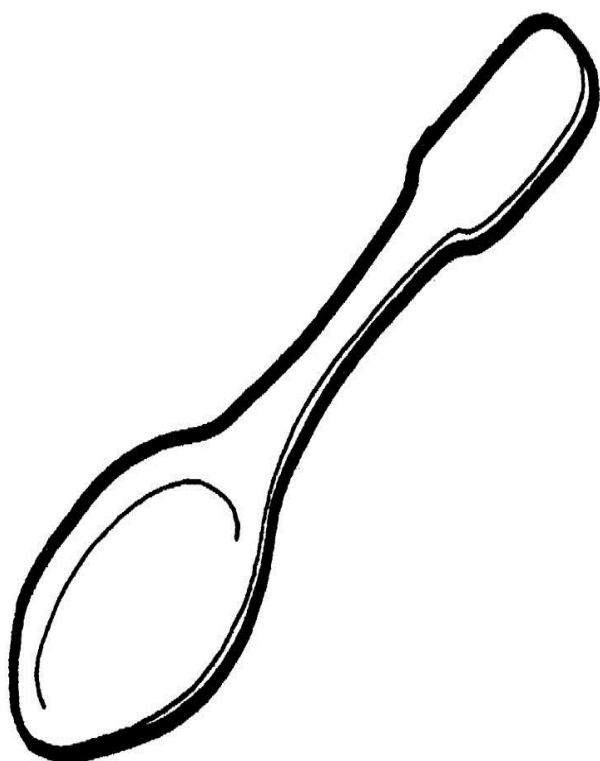
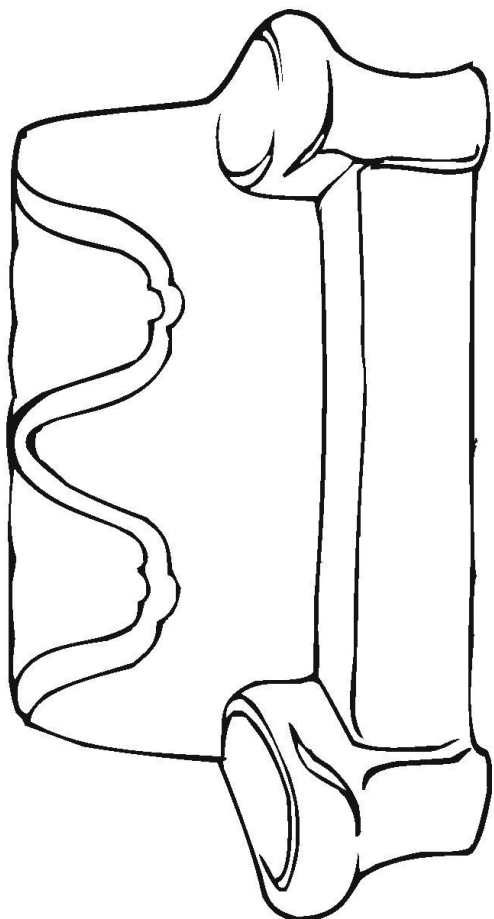


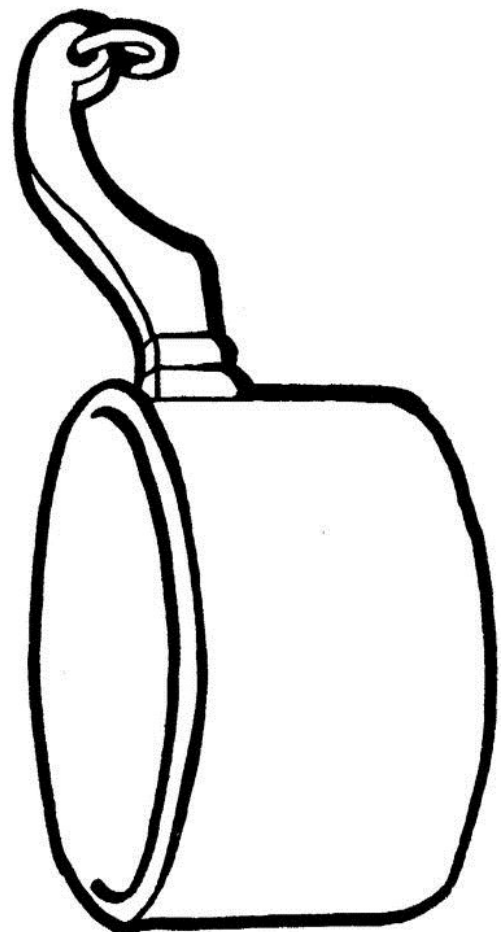
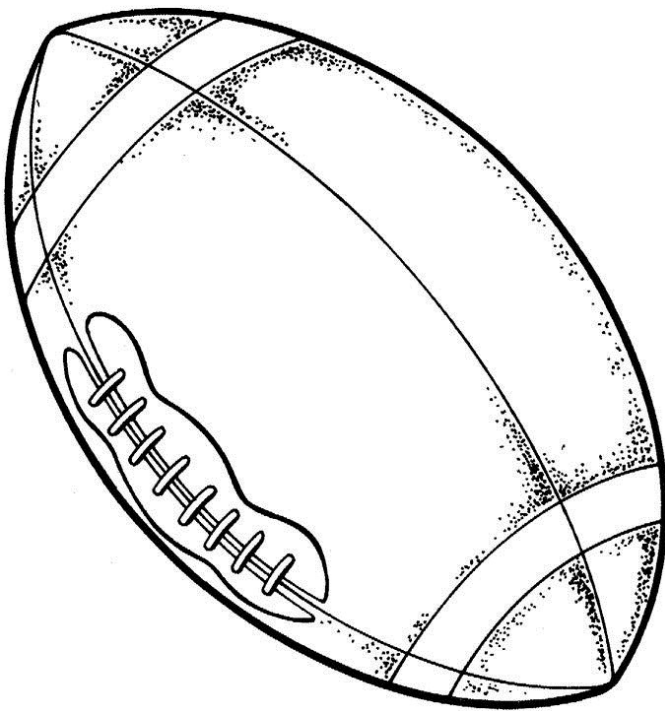
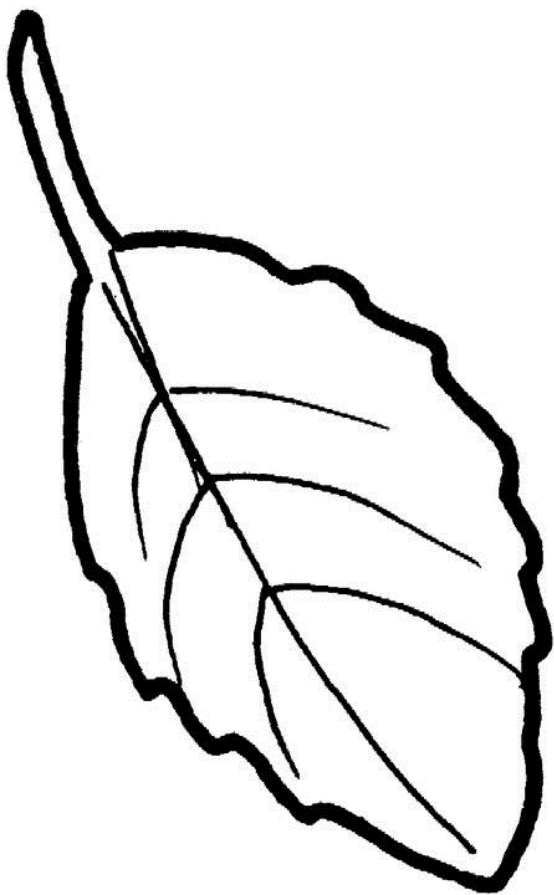
Character's Name

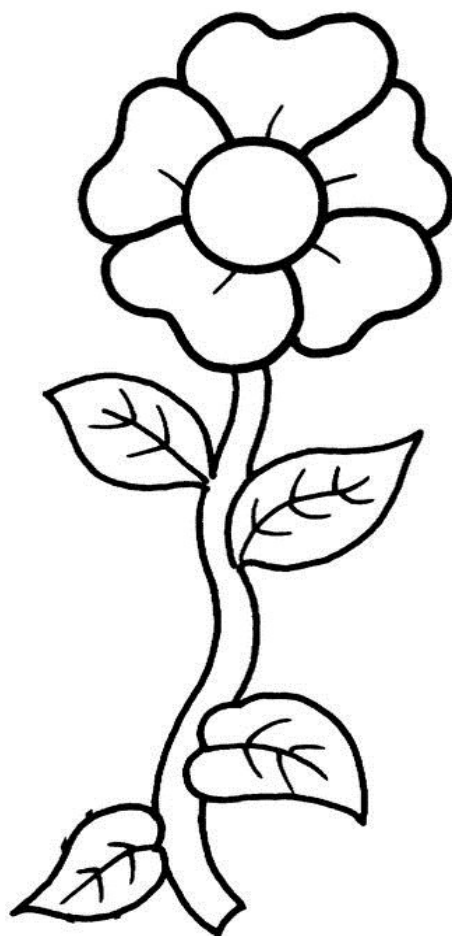
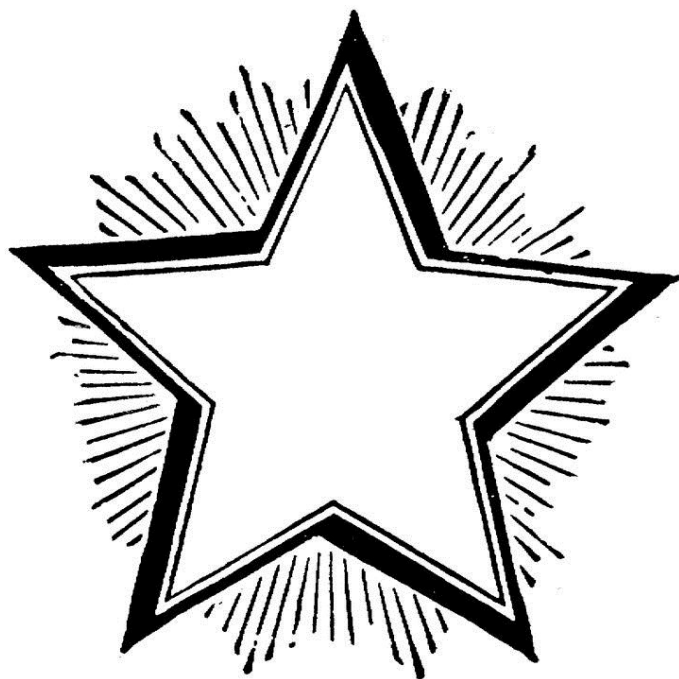
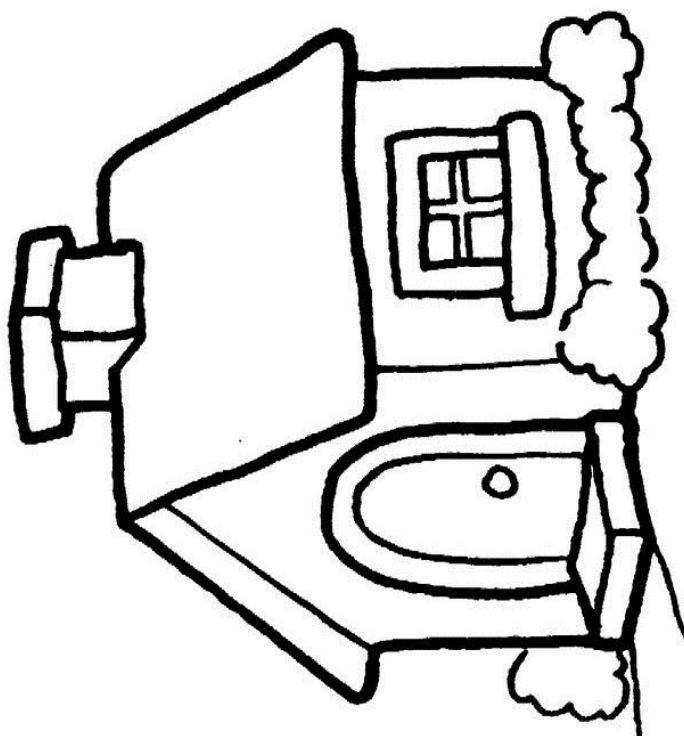
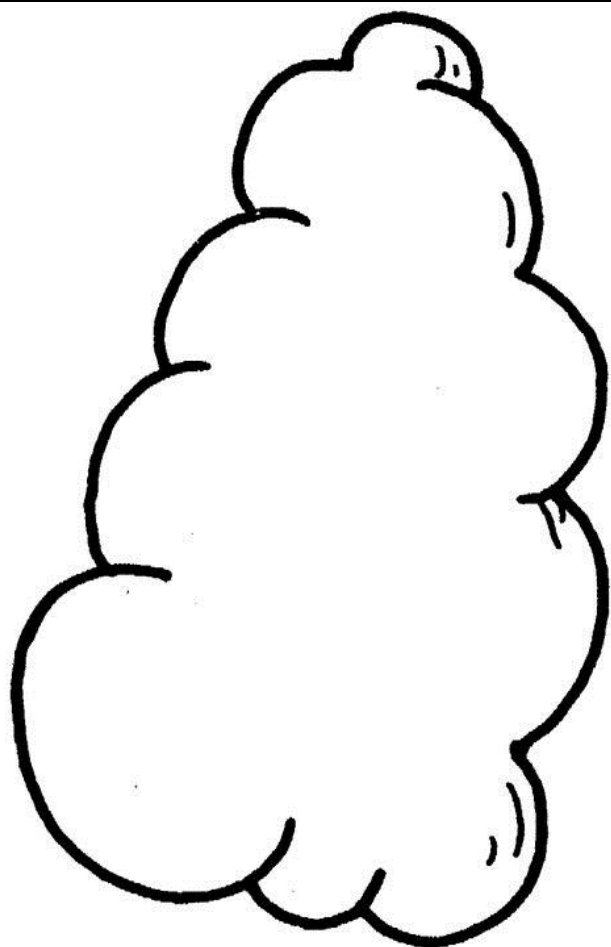
What does your character eat?

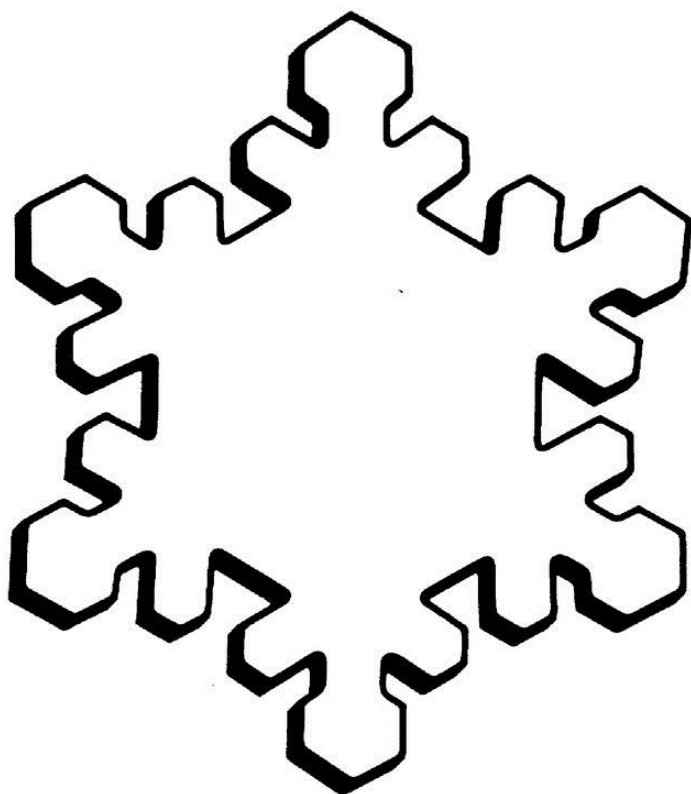
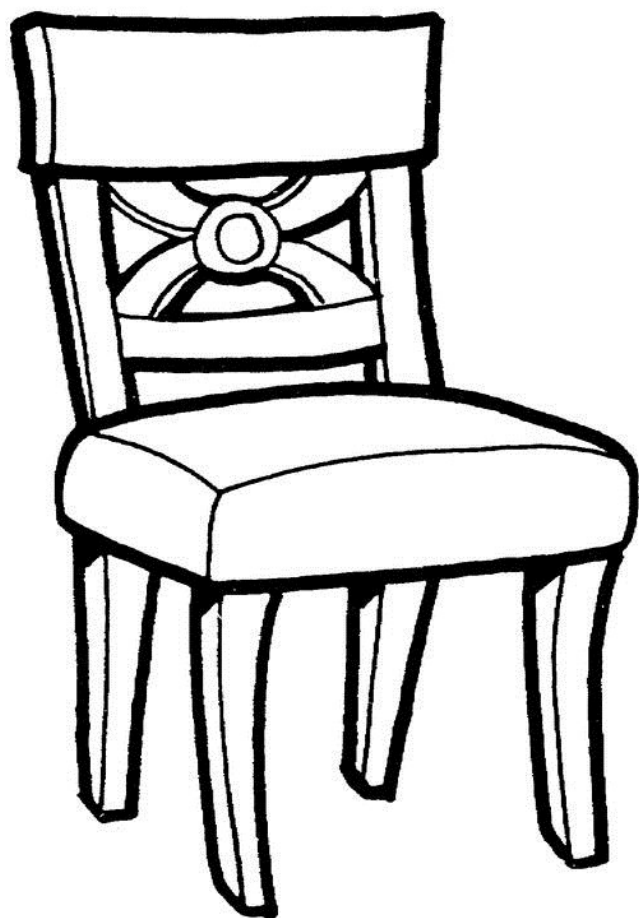
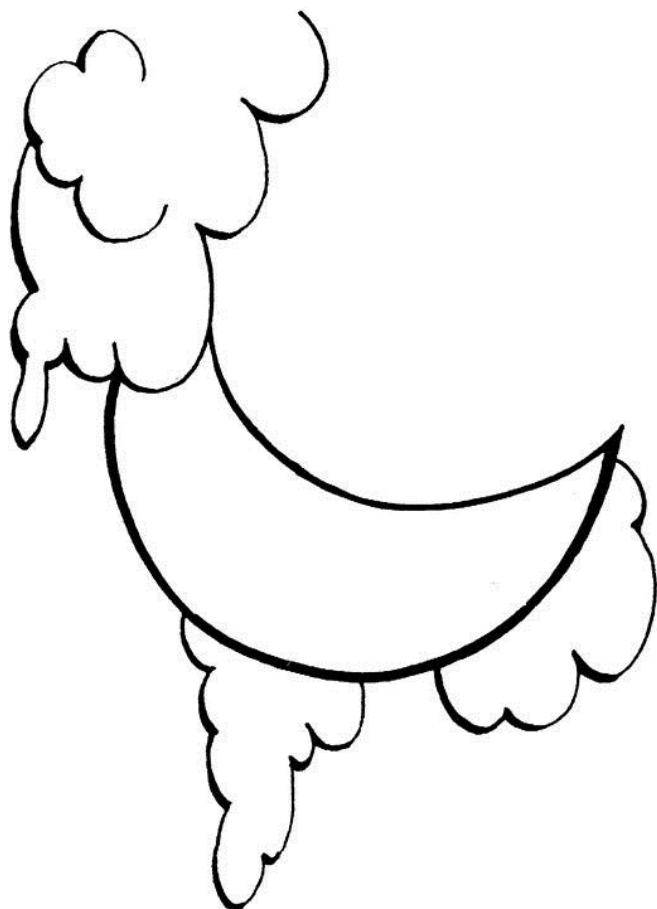
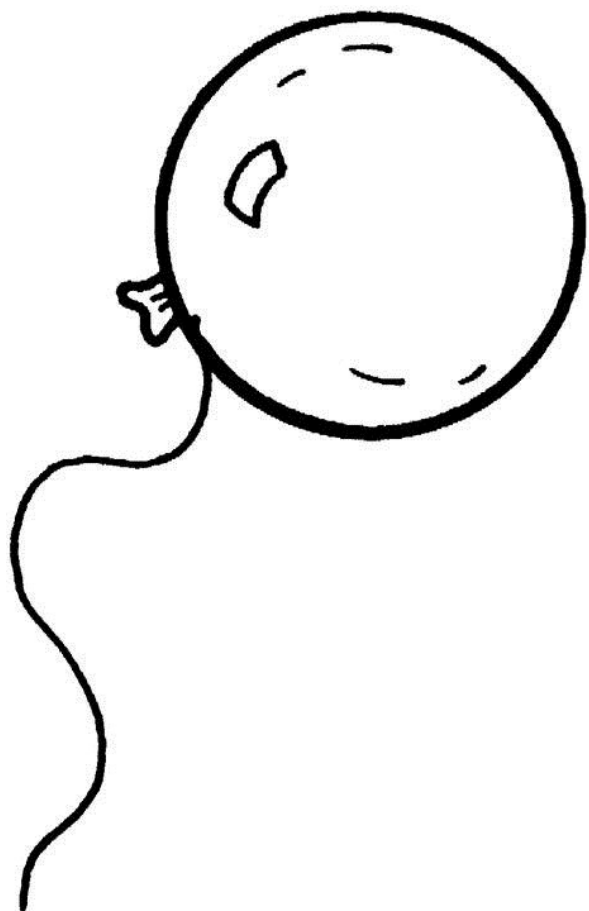
Where does your character sleep?

In what other ways is your character like a person?

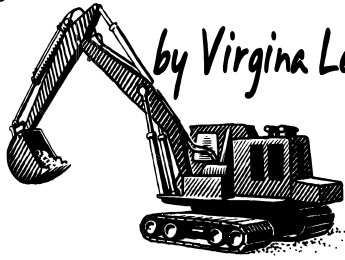








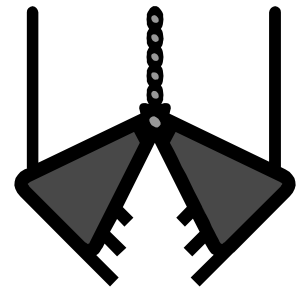
Mike Mulligan
by Virginia Lee Burton



& His Steam Shovel

MATH WORD PROBLEMS

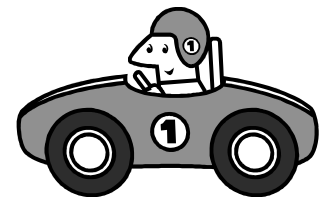
- 1.** Mike Mulligan and Mary Anne are digging a canal.
Four more steam shovels come along to help.
How many steam shovels are working?

A large, empty rectangular box with a light gray background, intended for the student to write their answer to the first word problem.

- 2.** Mike Mulligan and Mary Anne and some others cut a
pass through the mountain. There were eight steam
shovels in all. How many helped Mary Anne?

A large, empty rectangular box with a light gray background, intended for the student to write their answer to the second word problem.

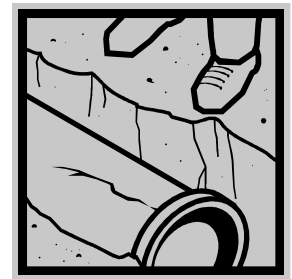
- 3.** There are six cars, one bus, and two delivery trucks on
the highway. How many vehicles in all?

A large, empty rectangular box with a light gray background, intended for the student to write their answer to the third word problem.

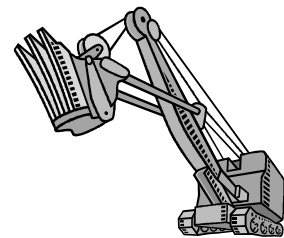
- 4.** One airplane is landing. Four airplanes are waiting to land. Three airplanes are on the landing field. How many airplanes in all?



- 5.** Last year Mike Mulligan and Mary Anne dug four cellars, three canals, and two drainage ditches. How many work projects did they complete?



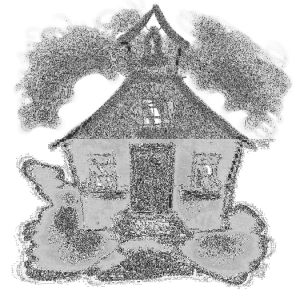
- 6.** Mary Anne saw four gasoline shovels, three electric shovels, and five diesel motor shovels. How many modern shovels did Mary Anne see?



- 7.** Popperville has four white houses, two yellow houses, one red house, and two stores. How many houses in all?



8. The Popperville School has ten boys and twelve girls. How many students attend Popperville School?

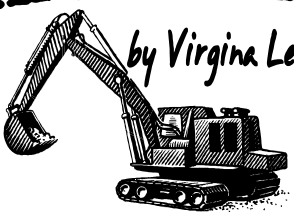


9. There are ten cases of milk in the Popperville milk cart. If six cases are delivered to the store, how many will be left?



10. Eight Kipperville children and seven Ropperville children came to watch Mike Mulligan and Mary Anne. How many children from other towns came to watch?



Mike Mulligan
by Virginia Lee Burton

& His Steam Shovel

**MATH WORD
PROBLEMS**

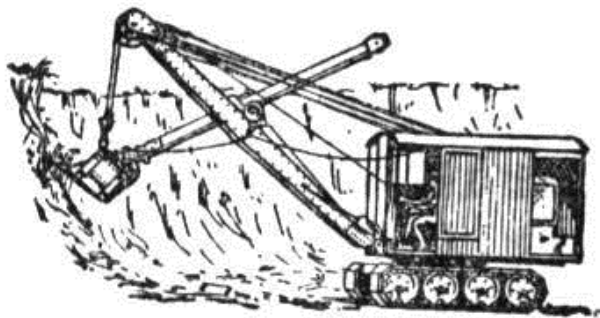
CONSTRUCTION VEHICLES COLORING BOOK

Directions:

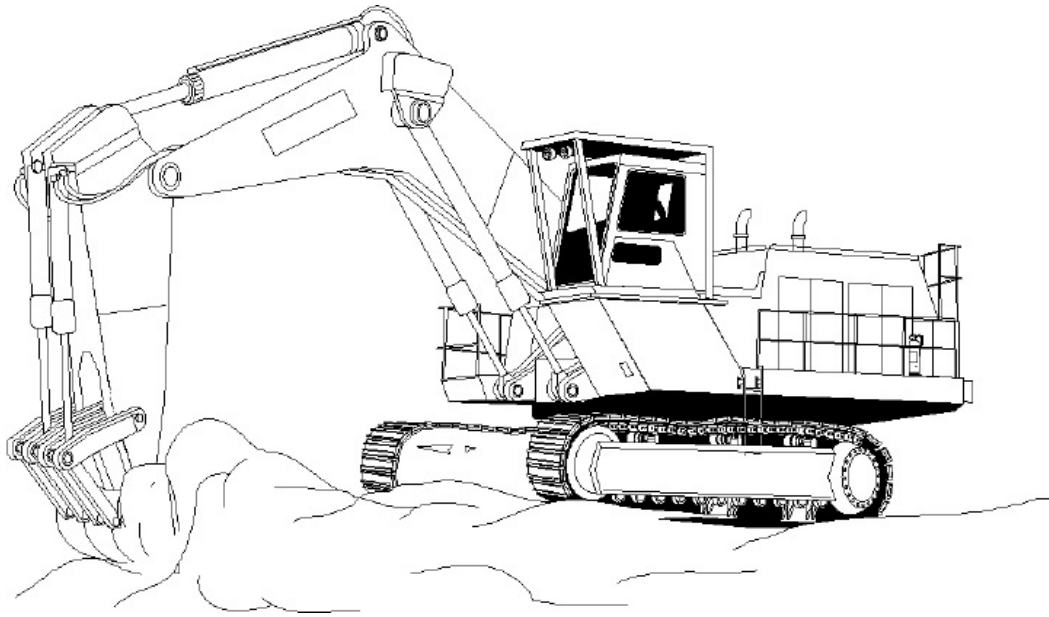
You can use the following pieces however you wish to create a minit book for your lapbook. I usually make a prepared book and then have my son cut and paste the pages in after he has colored them.

One way of making a prepared book is to fold eight pieces of paper in half (hamburger– horizontal fold). Glue the back of the first page to the front of the next page and continue until all pages are glued together. This makes a large book, but I think it looks nicer than using staples; it also makes a very sturdy book.

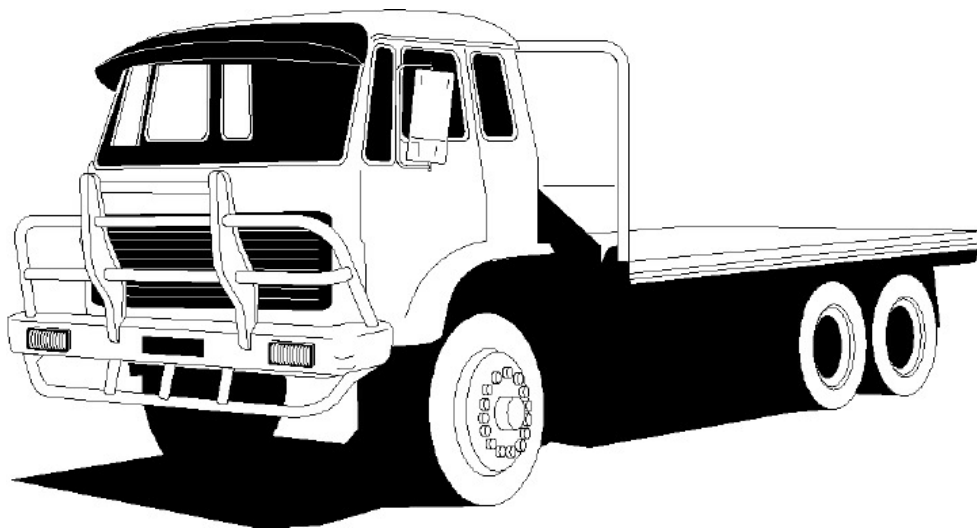
CONSTRUCTION



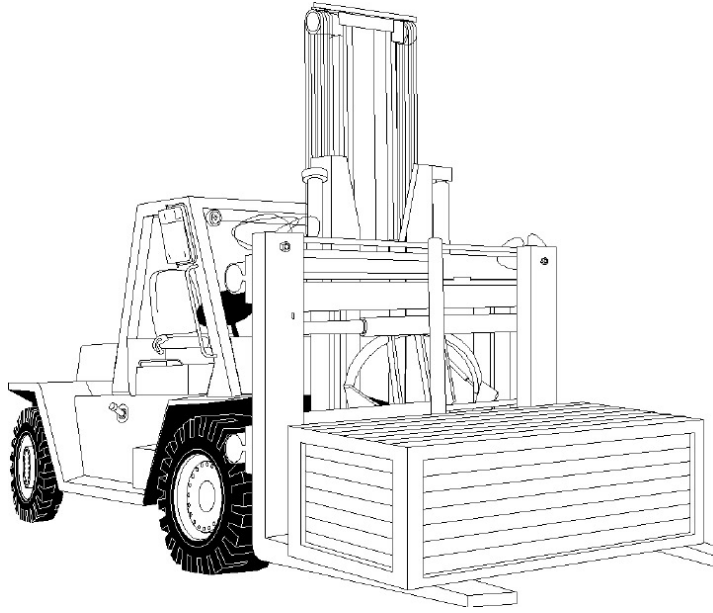
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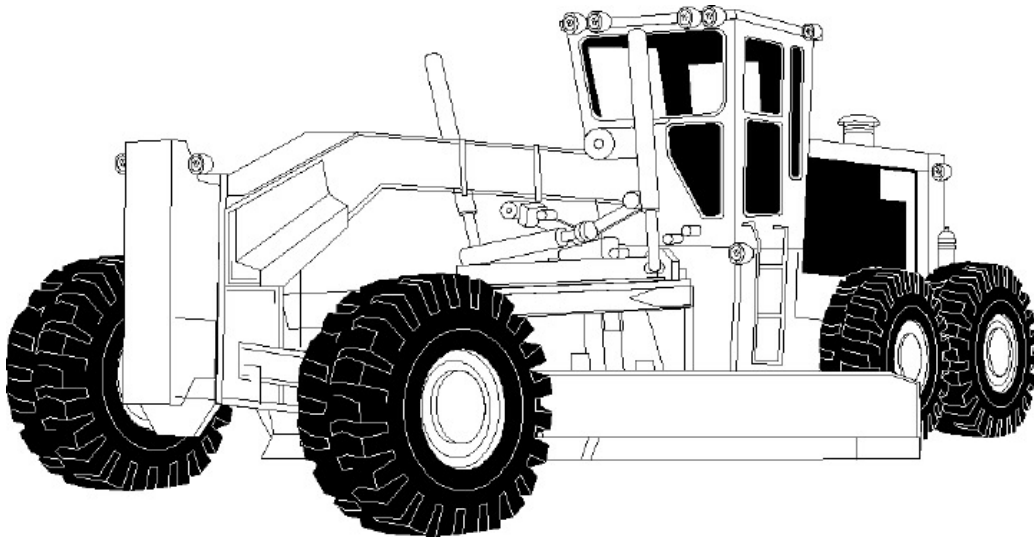
EXCAVATOR



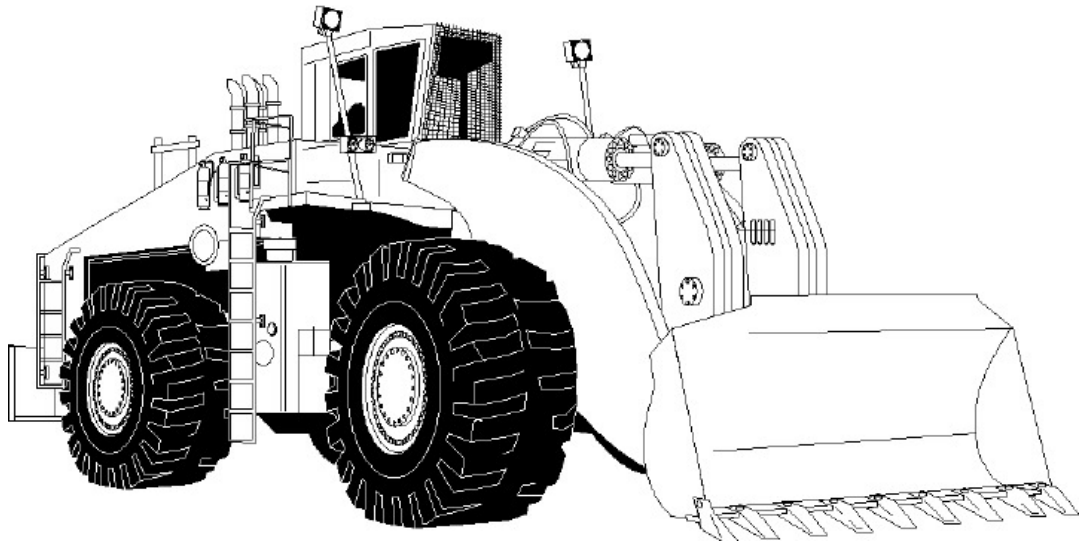
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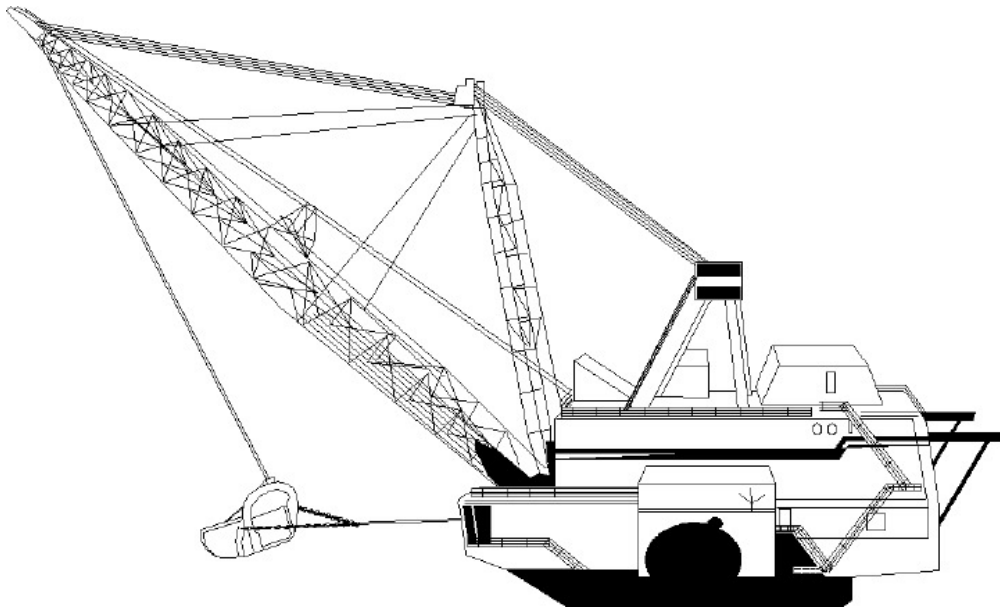
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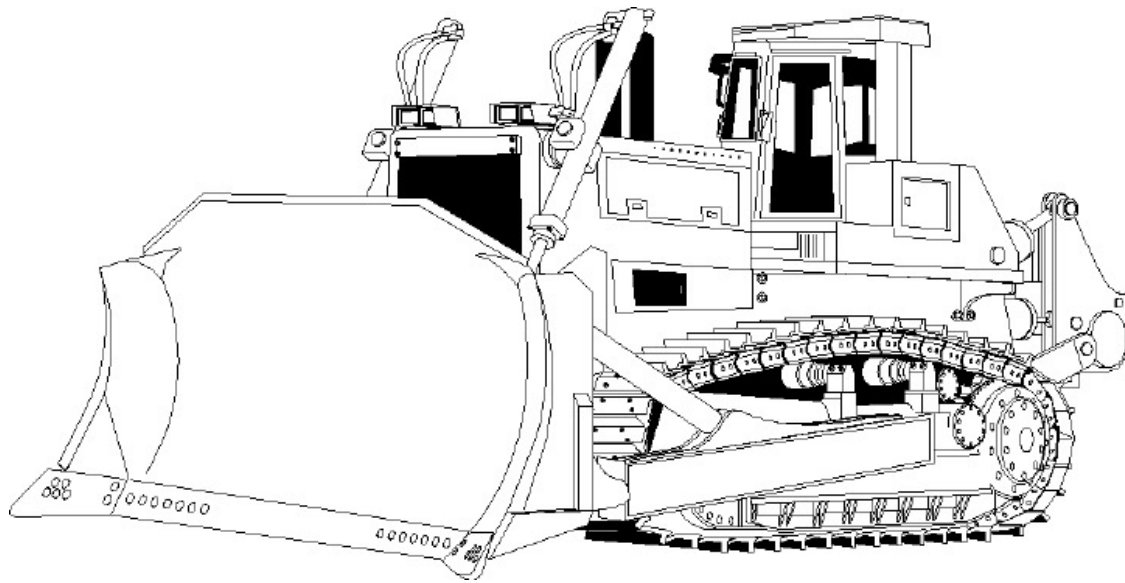
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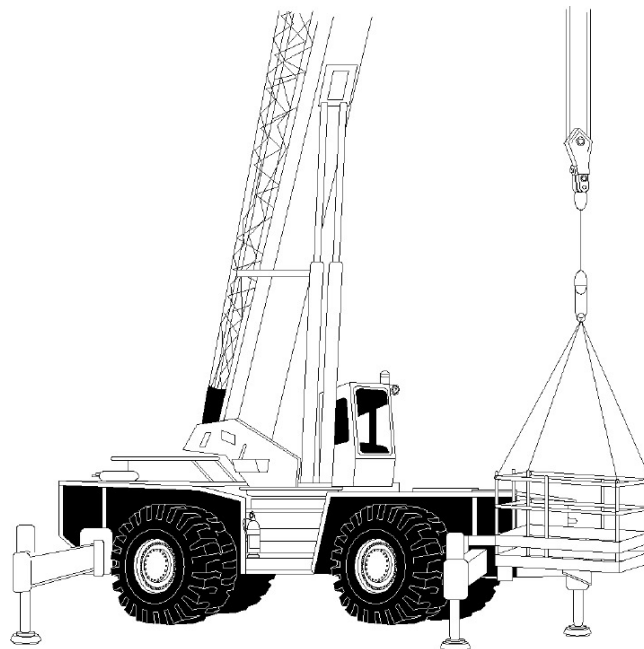
LOADER



DRAGLINE



BULLDOZER



CRANE