

4<sup>th</sup> gr

Packet Pick-up

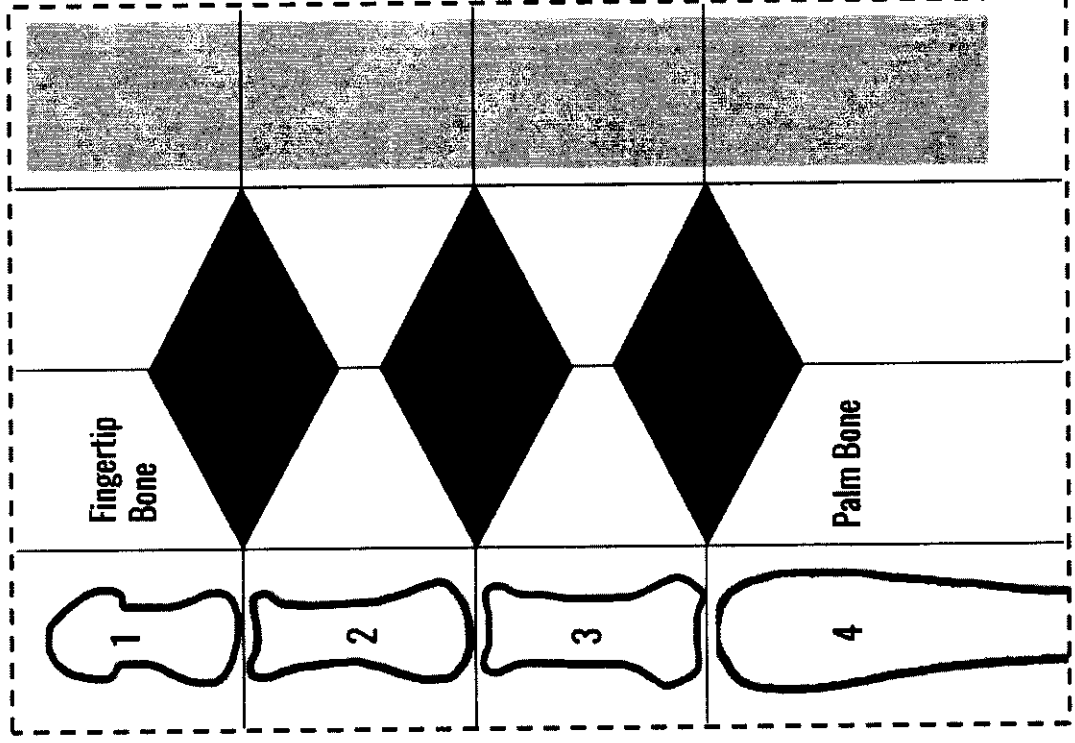
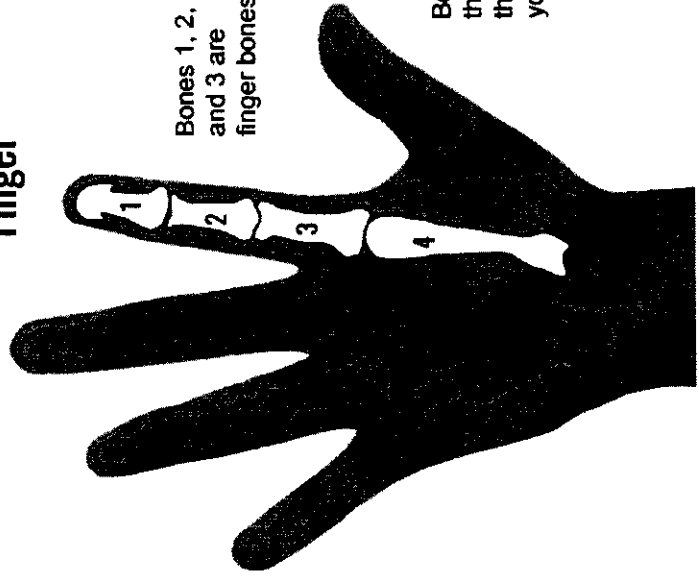
11/10/2020



# Robot Finger Template

Look at the drawing of the bones in your hand (below). You're going to be making a "robot" version of your pointer finger.

## Pointer Finger

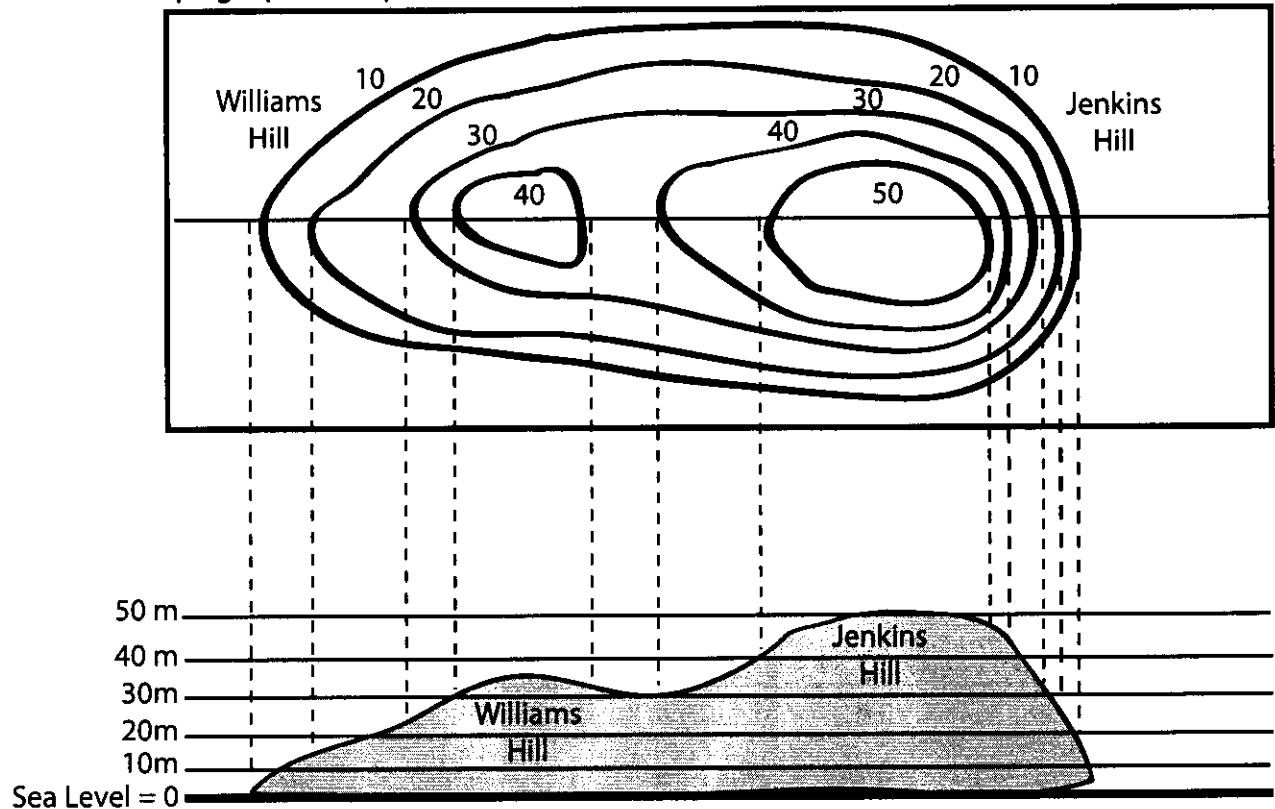


# Map Reading Activity: Topography

Topography is the study of elevations on land in relation to each other. It includes all valleys, mountains, and any sort of rise or dip in the ground.

Topography is shown on a map with lines radiating out from sea level. The more lines in between sea level and any point, the higher in elevation it is. These lines are generally called contour lines.

This is a topographic map with contour lines that show points that are on the same level.



Here, the two hills are seen from the side, with elevations marked and dotted lines pointing to the corresponding contour lines.

1. Color the elevations on the topographic map as follows:  
50m=Blue, 40m=Red, 30m=Purple, 20m=Yellow, 10m=Green
2. About how tall in meters is Williams Hill?
3. About how tall in meters is Jenkins Hill?
4. Which peak is taller and by how much?
5. Starting at sea level, how many meters are in between each contour line on the topographic map?
6. Which hill has a steeper slope?
7. Which hill has contour lines closer together?

# How to Make a Topographic Map

Maps are a big part of the fourth grade social studies curriculum, but maps in a textbook can seem boring and hard to conceptualize for many students. Learning how to make a topographic map is a great way to show kids how three-dimensional objects can be represented on a two-dimensional page.

## What You Need:

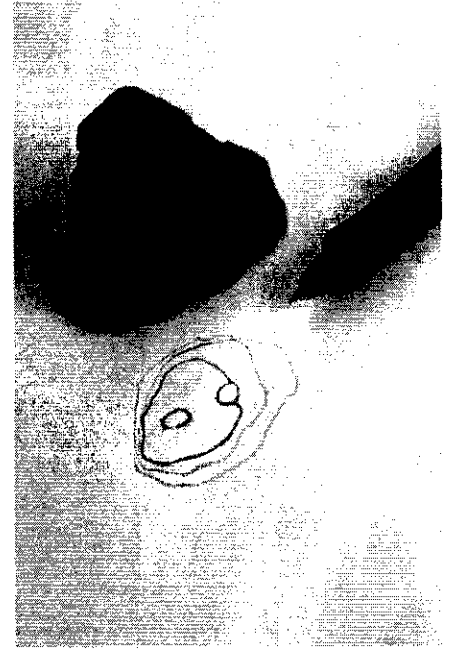
- Modeling clay
- Sharp paring knife
- Paper
- Pencil

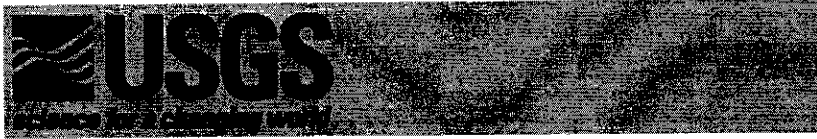
## What You Do:

1. Ask your child to shape his own mountain out of the modeling clay. Encourage him to make the mountain an interesting shape, rather than perfectly symmetrical.
2. Once finished, take the pencil and push two holes in the top of mountain all the way down to the bottom. Then, use the pencil to make horizontal markings on the clay from top to bottom about one inch apart.
3. Assisting your child with the paring knife, cut the top most slice of the mountain. Go slowly and carefully so as not to smooch your mountain!
4. Put the first slice on your piece of paper, and have your child trace around it. Then color where the two holes in the clay appear on the paper. Place the first slice aside.
5. Now cut your second slice and again trace on the paper. Be sure to line up the holes in the clay with the holes on the paper. Put the second slice aside. Repeat with the rest of your slices.
6. Now have your child put his mountain back together again, and compare the model with his topographic representation. Does the map look like his mountain? Can he find the steepest side? The most gradual slope? The highest point?
7. Discuss with your child why a topo map is a useful tool.

## What's Going On?

While modeling clay is usually endless fun all by itself, there's also important lifetime learning here. Maps provide abstract representation of all the earth's surfaces, and they'll show up in textbooks, classrooms, and all sorts of newspapers and magazines for years to come. With practice, your child will become fully comfortable with maps of all kinds—and may even ask to climb a mountain or two!





## Lesson 4—How to Read a Topographic Map

### Key teaching points

A **topographic map** is a representation of a three-dimensional surface on a flat piece of paper. The digital elevation model on the poster is helpful in understanding **topographic maps**.

Contour lines, sometimes called "level lines," join points of equal elevation. The closer together the contour lines appear on a **topographic map**, the steeper the slope (assuming constant contour intervals).

**Topographic maps** have a variety of uses, from planning the best route for a hike to determining a location for a school or an airport.

### How this lesson relates to the geographic themes

*Location and place*—Using a topographic map can give students a clear understanding of the physical and manmade characteristics of a location. The topographic map allows for a clear understanding of such physical features as mountains and canyons.

*Relationships within places*—Using the topographic map, students can see why some things are where they are. They can see how people have adapted to the physical characteristics of a particular location.

*Movement*—Students can begin to understand how the topography of a location influences the transportation and communication within that area and with the rest of the world.

### Materials you need for this lesson

A copy of Activity Sheet #4 for each student.

### Suggestions for teaching this lesson (3, 35-minute sessions)

On the poster is a **topographic map** of Salt Lake City. This lesson will help students learn how to read that map. Learning to use a **topographic map** is a difficult skill, because it requires students to visualize a three-dimensional surface from a flat piece of paper. Students need both practice and imagination to learn to visualize hills and valleys from the contour lines on a **topographic map**.

A digital terrain model of Salt Lake City is shown on the poster. This three-dimensional drawing, created from computerized data, is a helpful transition step for students as they learn to visualize the shape of the land from contour lines.

1. *Discuss the word "topographic."* Remind students that there are many different types of maps. Tell them that they are going to learn about a specific type of map—the **topographic map**. Begin the lesson by introducing students to the word "topographic." Write the word on the board. Tell students the word is derived from two Greek words—"topo," meaning "place," and "graphos," meaning "drawn or written." Ask students if they can use that information to figure out what "topographic" might mean. Then ask a student to look up the word in the dictionary to see whether the guess was correct.

2. *Hand out Activity Sheet #4.* The top illustration introduces students to contour lines. Point out that a contour line joins points of equal elevation. Think of it as an imaginary line on the ground that takes any path necessary to maintain constant elevation.

First, have the students look at the side view of the hills. (Bottom of the illustration)

### Ask students to answer these questions and fill in their answers on Activity Sheet #4:

Which is higher, hill A or hill B?  
(Answer: hill B)

Which is steeper, hill A or hill B?  
(Answer: hill B)

3. Compare a **topographic map** to a picture of the same place. Now have the students look at the **topographic map** of the same two hills. Say, "The lines you see on this map are called contour lines. Can you see why they are sometimes called 'level lines'?" Ask the students to trace with their fingers around the 40-foot contour line on the map. Then ask them to look at the picture of the hill and draw their fingers around the 40-foot contour line.

Then ask the students to draw their fingers along the 20-foot contour line on the topographic map. Then draw their fingers along the 20-foot line on the picture of the hill. This exercise will help those students who are kinesthetic learners.

### Ask students to answer this question and fill in the answer on Activity Sheet #4:

- How many feet of elevation are there between contour lines?  
(Answer: 10 feet)

Show the students that some contour lines are thicker than others. These "index contours" include labels to make it easier to read elevations from the maps.

### Ask students to answer these questions and fill in the answers on Activity Sheet #4:

- How high is hill A?  
(Answer: about 42 feet)  
Hill B?  
(Answer: about 54 feet)

- Are the contour lines closer together on hill A or hill B?  
(Answer: hill B)

# Lesson 4—page 2

Help students understand that the closer the lines, the steeper the slope. Have students point out other places on the map that have a very steep slope.

4. Introduce students to other information shown on a **topographic map**. Now have the students look at the picture on page 2 of the activity sheet.

**Have students identify and circle these features on the illustration 2 of Activity Sheet #4:**

- A church
- A bridge over the river
- An oceanside cliff
- A stream that flows into the main river
- A hill that rises steeply on one side and more smoothly on the other.

**Have students identify and circle the same features on illustration 3 of Activity Sheet #4.**

- Draw the map symbol for a church.



- Draw the map symbol for a bridge.



- Put an X on the oceanside cliff.
- What is the elevation of the contour line at the top of the cliff?  
(Answer: 100 feet)

- Locate a stream that flows into the main river. Draw a pencil line down that stream. Put an X where the stream joins the main river. On a real **topographic map**, streams are shown in blue and contour lines are shown in brown.

5. Discuss how **topographic maps** are used. Maps are developed for special purposes. **Topographic maps** are used in a variety of ways.

**How might you use a topographic map if you were selecting:**

- A route for a hike.  
(Choose route that's not too steep. When planning a long hike, you may want to see whether water is available or whether it should be carried in. Woods tint may indicate whether the route is shaded.)
- The best location for an airport.  
(Make sure airplanes have plenty of room to take off and land before the ground rises. Do not let students suggest building in a swamp, in the woods, or in a built-up area.)

- A route for a new road.  
(Find a shallow grade rather than a steep one. Do not allow them to cross too many rivers because bridges are expensive.)

6. Working with the **topographic map** in the map packet. Now that your students have a basic understanding of how **topographic maps** work, here are some questions to ask them about the **topographic map** in their map packet:

- What is the approximate elevation of the State capitol?  
(Answer: 4,500 feet)

Would you be walking uphill or downhill to go from the State capitol to Pioneer Park?  
(Answer: downhill)

- Suppose you lived by Fremont School. Find at least three ways you could get from your house to the State capitol. List things you would see along the way.

## Additional activities for follow-up

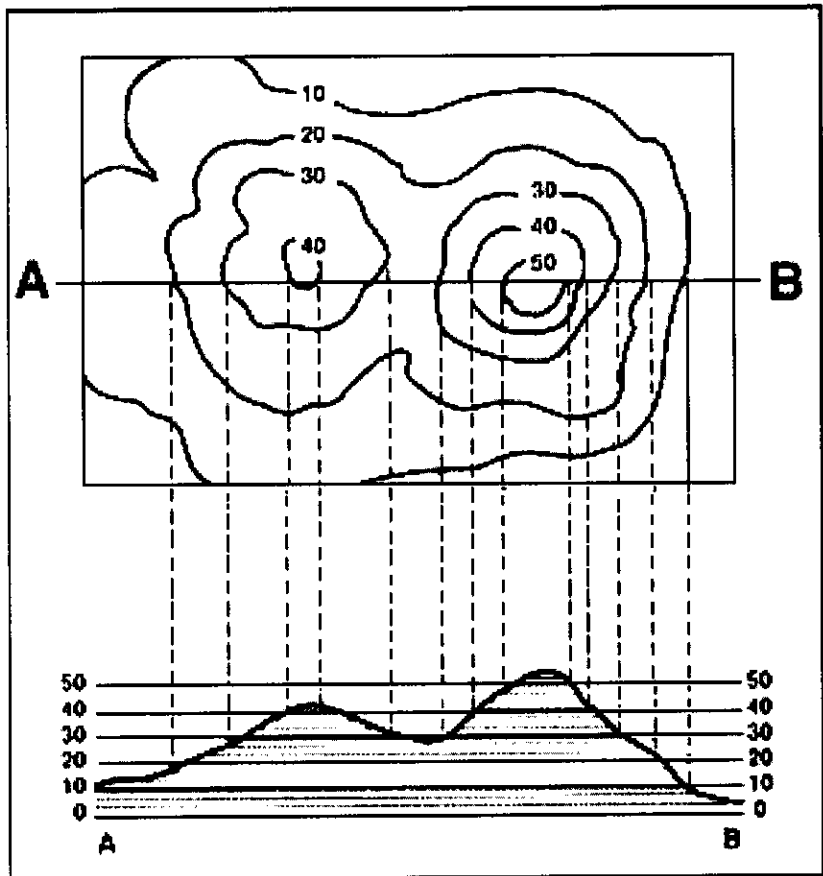
The **topographic map** shows that Salt Lake City has a Pony Express Monument near the State capitol. Have your students learn more about the Pony Express and why this monument is located in Salt Lake City.

Return to "What Do Maps Show" Home Page



## Activity Sheet #4—How to Read a Topographic Map

One special kind of map is called a **topographic map**. It has contour lines to show the shape and elevation of the land. They are sometimes called "level lines" because they show points that are at the same level. Here's how contour lines work:



The top of this drawing is a contour map showing the hills that are illustrated at the bottom.

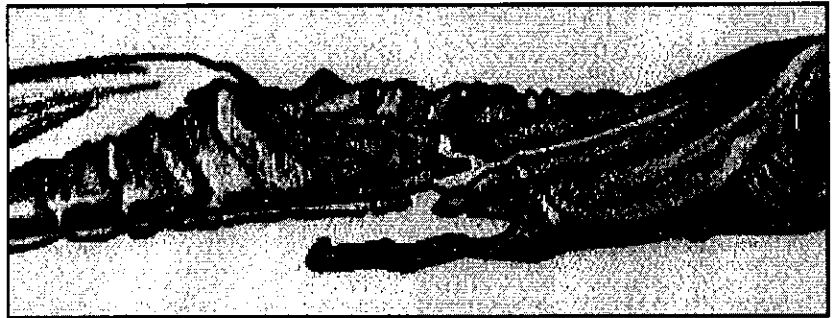
On this map, the vertical distance between each contour line is 10 feet.

1. Which is higher, hill A or hill B? \_\_\_\_\_
2. Which is steeper, hill A or hill B? \_\_\_\_\_
3. How many feet of elevation are there between contour lines? \_\_\_\_\_
4. How high is hill A? \_\_\_\_\_ Hill B? \_\_\_\_\_
5. Are the contour lines closer together on hill A or hill B? \_\_\_\_\_

## Activity Sheet #4, page 2

Look at this picture. It shows a river valley and several nearby hills. On the illustration, locate the following things:

- A church
- A bridge over the river
- An oceanside cliff
- A stream that flows into the main river
- A hill that rises steeply on one side and more smoothly on the other.



Here is a **topographic map** of the same place. Find the items you located on the illustration on the topographic map.

Circle the symbol for a church.

Draw a church symbol here.

Put a square around the map symbol for a bridge.

Draw a bridge symbol here.

Put an X on the oceanside cliff.

What is the elevation of the contour line at the top of that cliff? \_\_\_\_\_

Locate a stream that flows into the main river. Draw a pencil line down that stream. Put an X where the stream joins the main river. On a real **topographic map**, streams are shown in blue and contour lines are shown in brown.





## Activity Sheet #4, page 3

Find the hill that rises steeply on one side and more smoothly on the other. On the **topographic map**, draw a path up the gentler slope of the hill to the highest point. (Hint: remember that when contour lines are close together, the ground is very steep.) Draw a path showing a very steep way up the hill.

Tell how you might use a **topographic map** if you were selecting:

1. A route for a hike. \_\_\_\_\_
2. The best location for an airport. \_\_\_\_\_
3. A route for a new road. \_\_\_\_\_

Use the **topographic map** in your map packet to answer these questions:

What is the approximate elevation of the State Capitol? \_\_\_\_\_

Would you be walking uphill or downhill to go from the State capitol to Pioneer Park? \_\_\_\_\_

Suppose you lived by Fremont School. Find at least three ways you could get from your house to the State capitol. \_\_\_\_\_

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List things you would see along the way. \_\_\_\_\_

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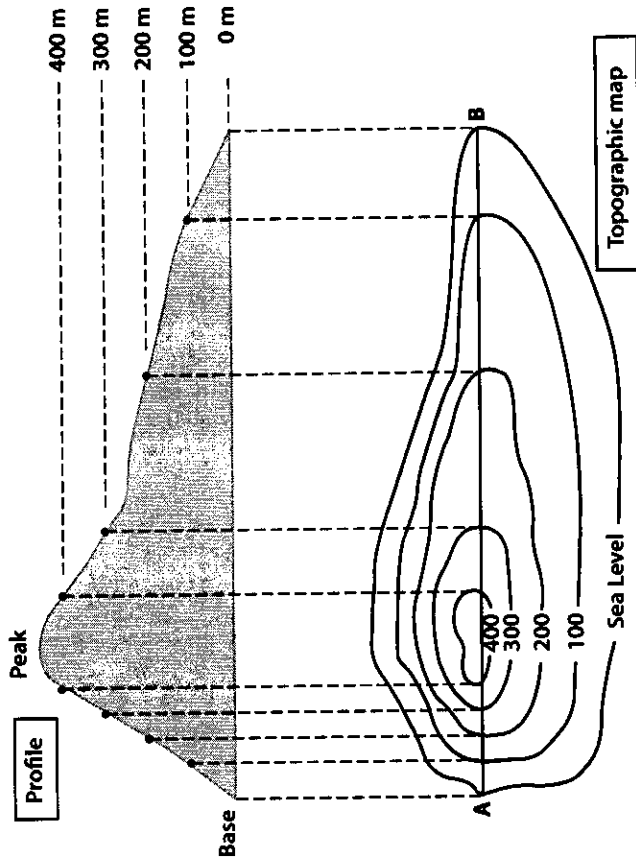
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Return to Lesson 4

Return to "What Do Maps Show?" Home Page

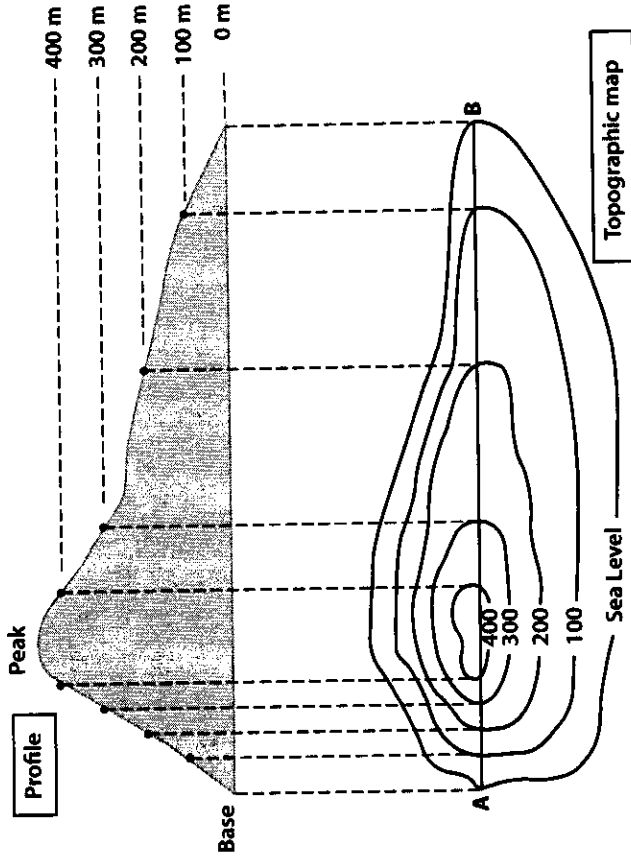
## Contours and Intervals



The distance between contour lines on a topographic map is not always the same. But the contour interval (the difference in elevation between the lines) is always the same. The contour interval for this map is 100 m.

Contour lines that are spaced closer together represent a steeper slope.

## Contours and Intervals



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Contour lines that are spaced closer together represent a steeper slope.

### Response Sheet A—Investigation 3

William and his uncle are planning a hike to Mallard Peak, a landmark in a nearby park. They will park the car near the picnic area close to the highway and hike from there.

They have a topographic map of the area. They want to use it to plan the best route to the peak. They don't mind climbing up steep slopes and want to stop by a waterfall on the way up. They think it would be good to walk down a less steep slope at the end of the day.

Help William and his uncle out. Use the map on Response Sheet B to draw a trail that you suggest they take to get to the top of the peak and back again. Label the start and end points. Use arrows to show the direction they should hike.

On a blank page in your notebook, explain why you think the route you drew will be the best one.

### Response Sheet A—Investigation 3

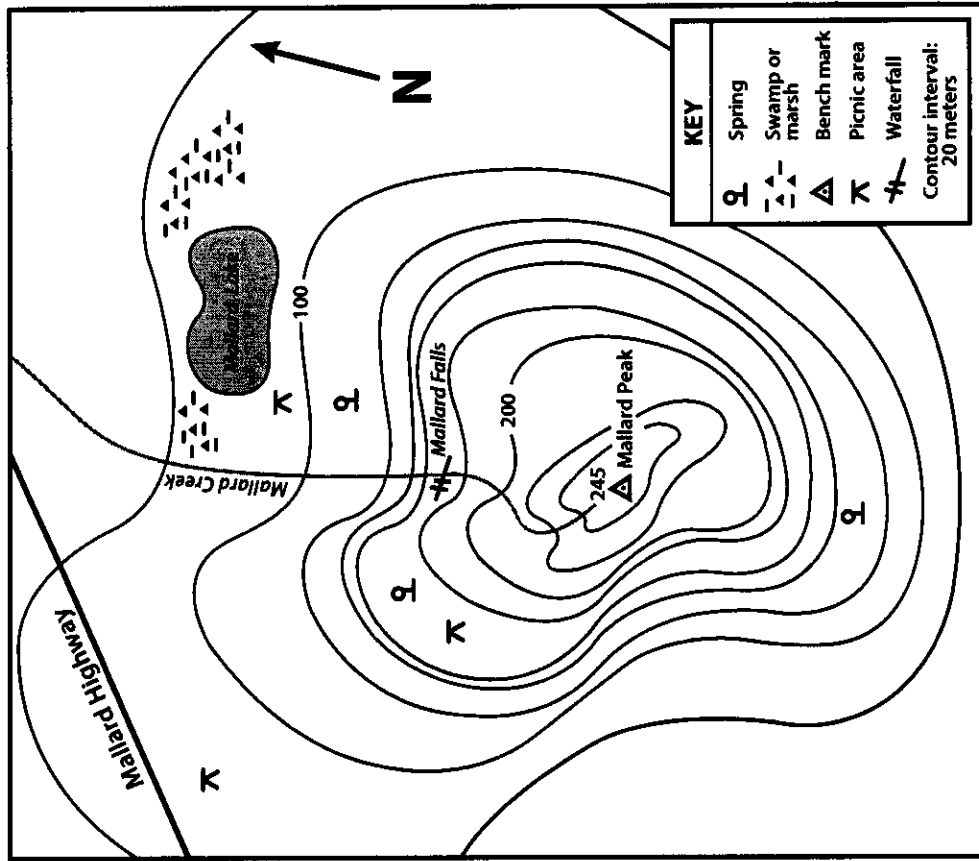
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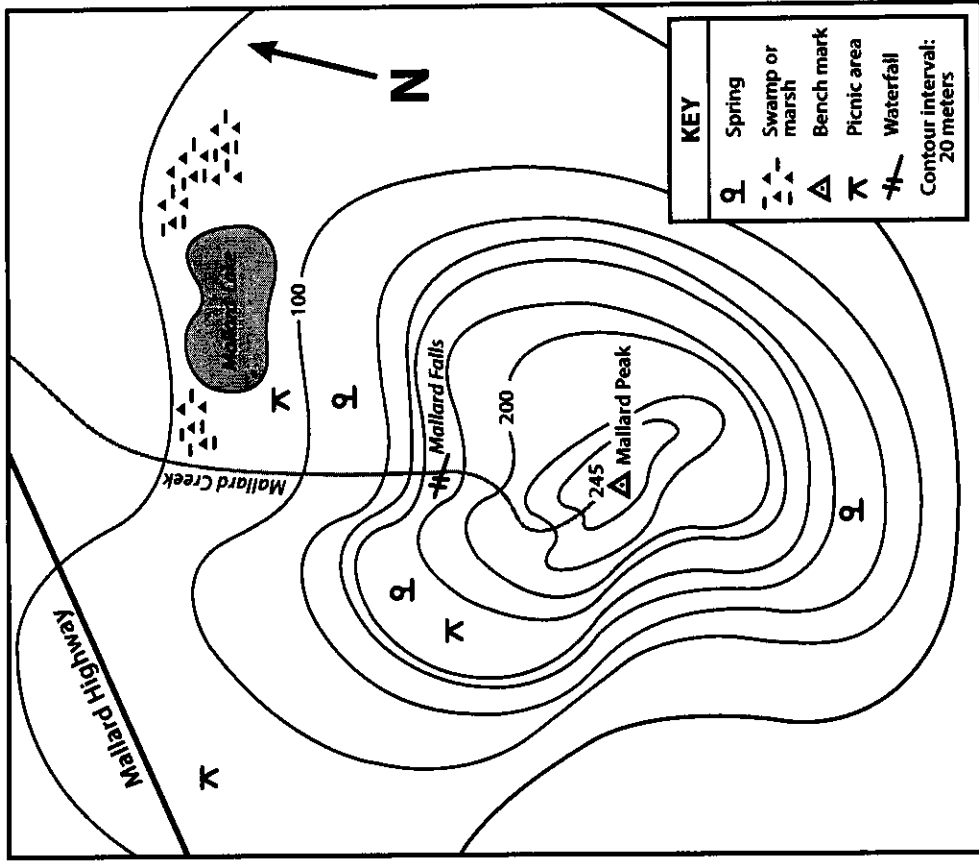
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On a blank page in your notebook, explain why you think the route you drew will be the best one.

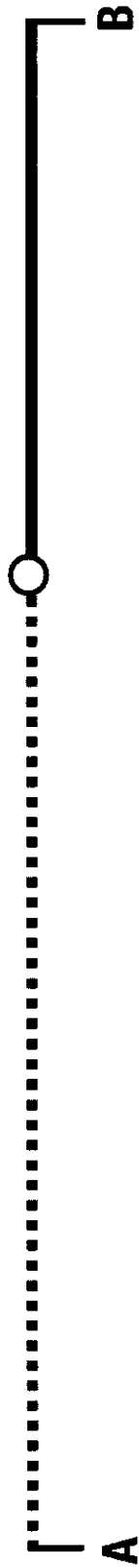
### Response Sheet B—Investigation 3



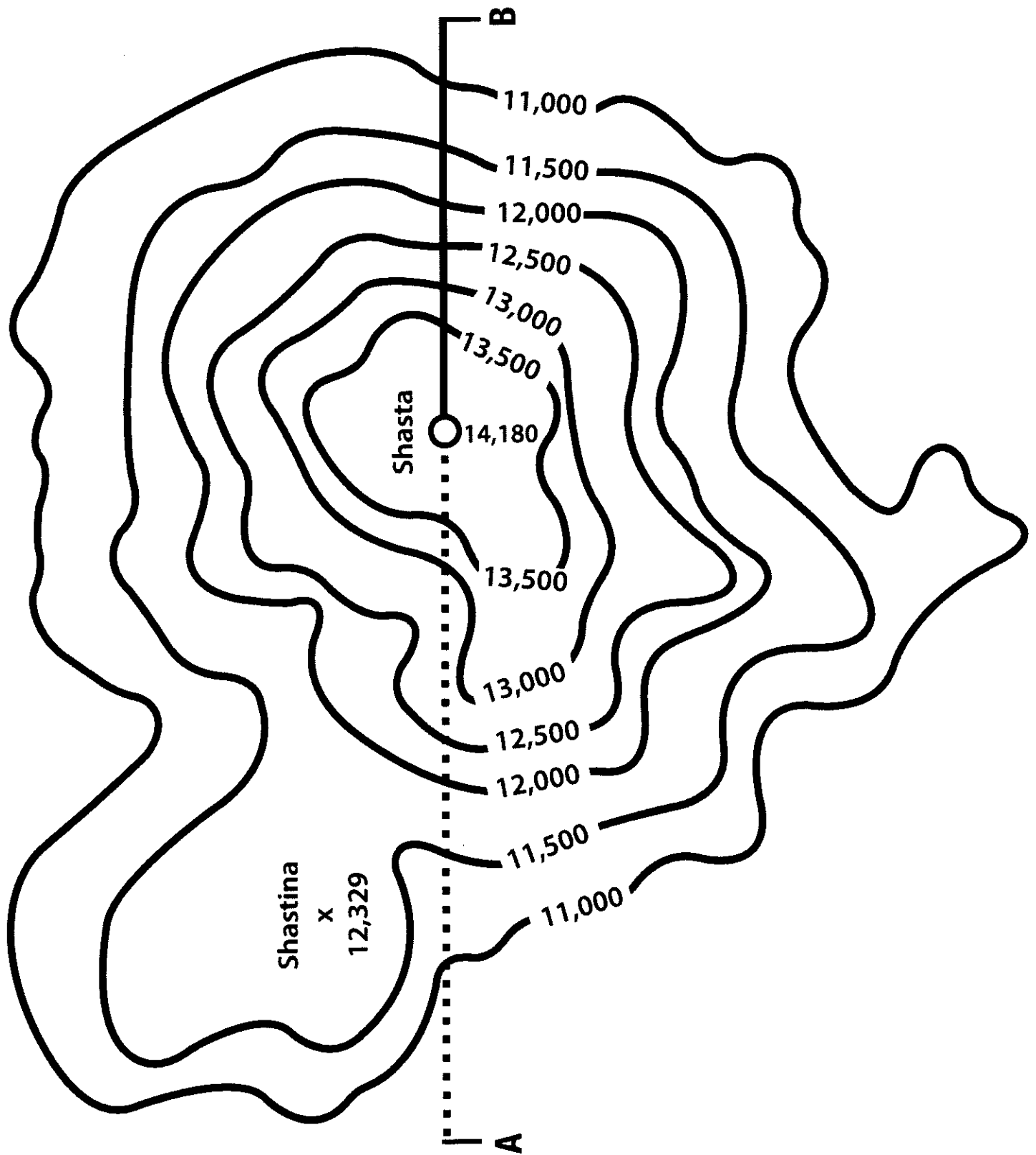
### Response Sheet B—Investigation 3



# MOUNTAIN MAP



# MOUNTAIN MAP WITH ELEVATIONS



**PROFILE**

.....

**A**

Contour-  
line  
number

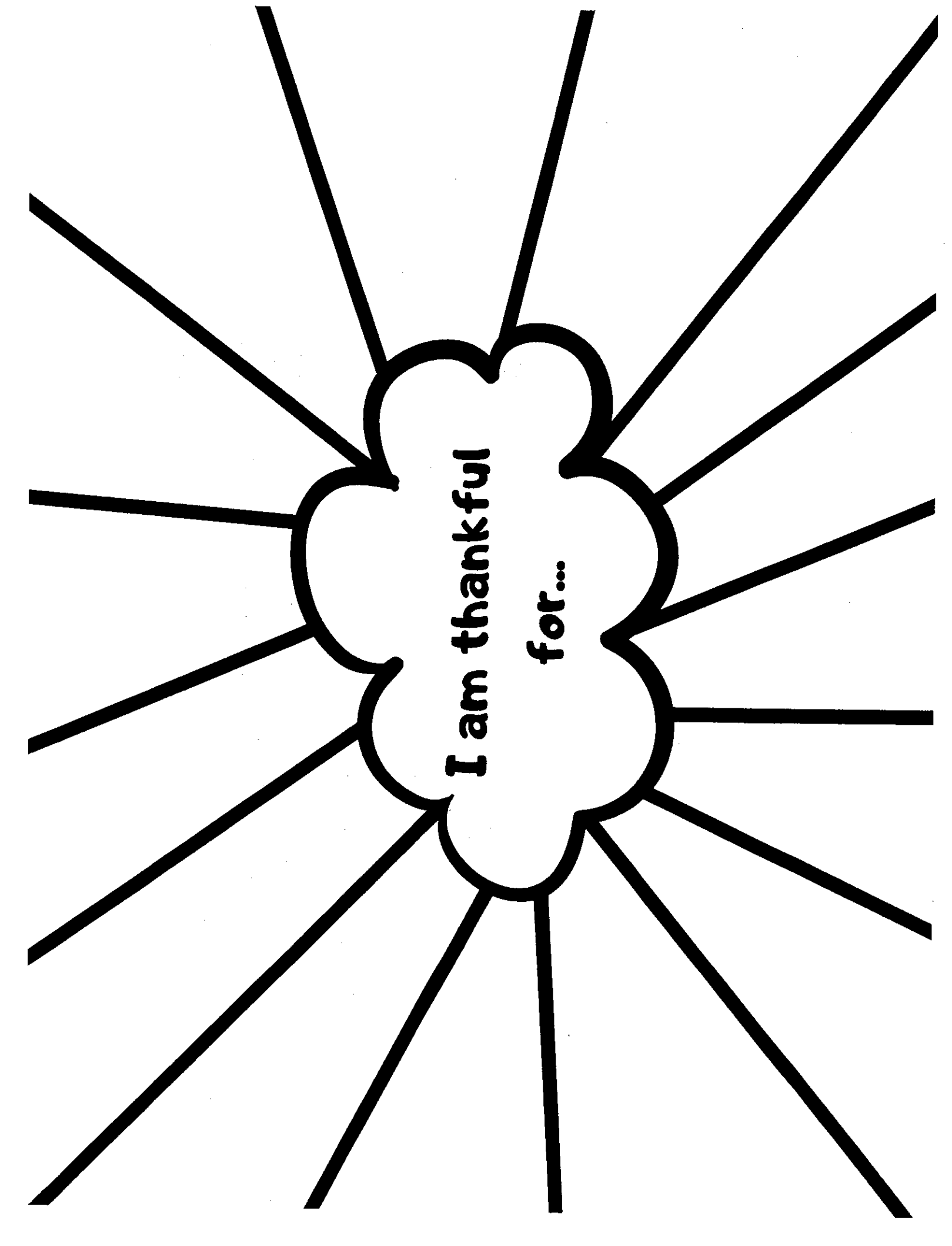
**B**

|  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|

**A**

**Title** \_\_\_\_\_

**B**



**I am thankful**

**for...**



## November Spirit Week

Newton Elementary School Student Council invites you to participate in our November Spirit Week. We hope to see as many students as possible to show our school spirit, as well as our appreciation for our school, our teachers and staff.

- Monday, November 16 - Crazy Hair

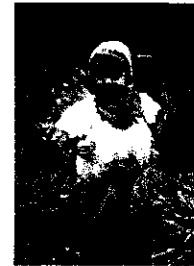


- Tuesday, November 17 - Wear create-able art



- Wednesday, November 18 - Thankful Show & Tell

- Thursday, November 19 - Fall Colors / Dress Like a Turkey

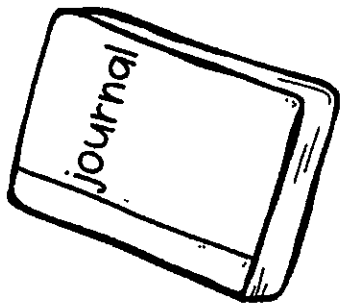
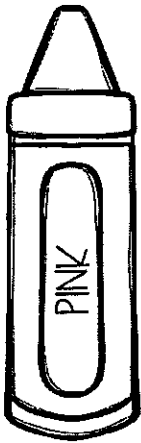


- Friday, November 20 - Pajama Day

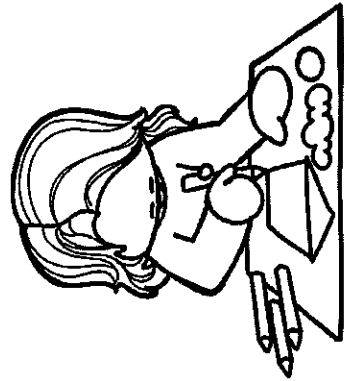
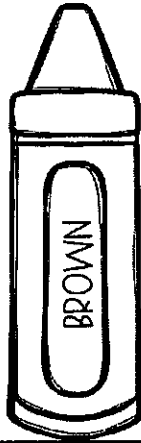
## PI Day



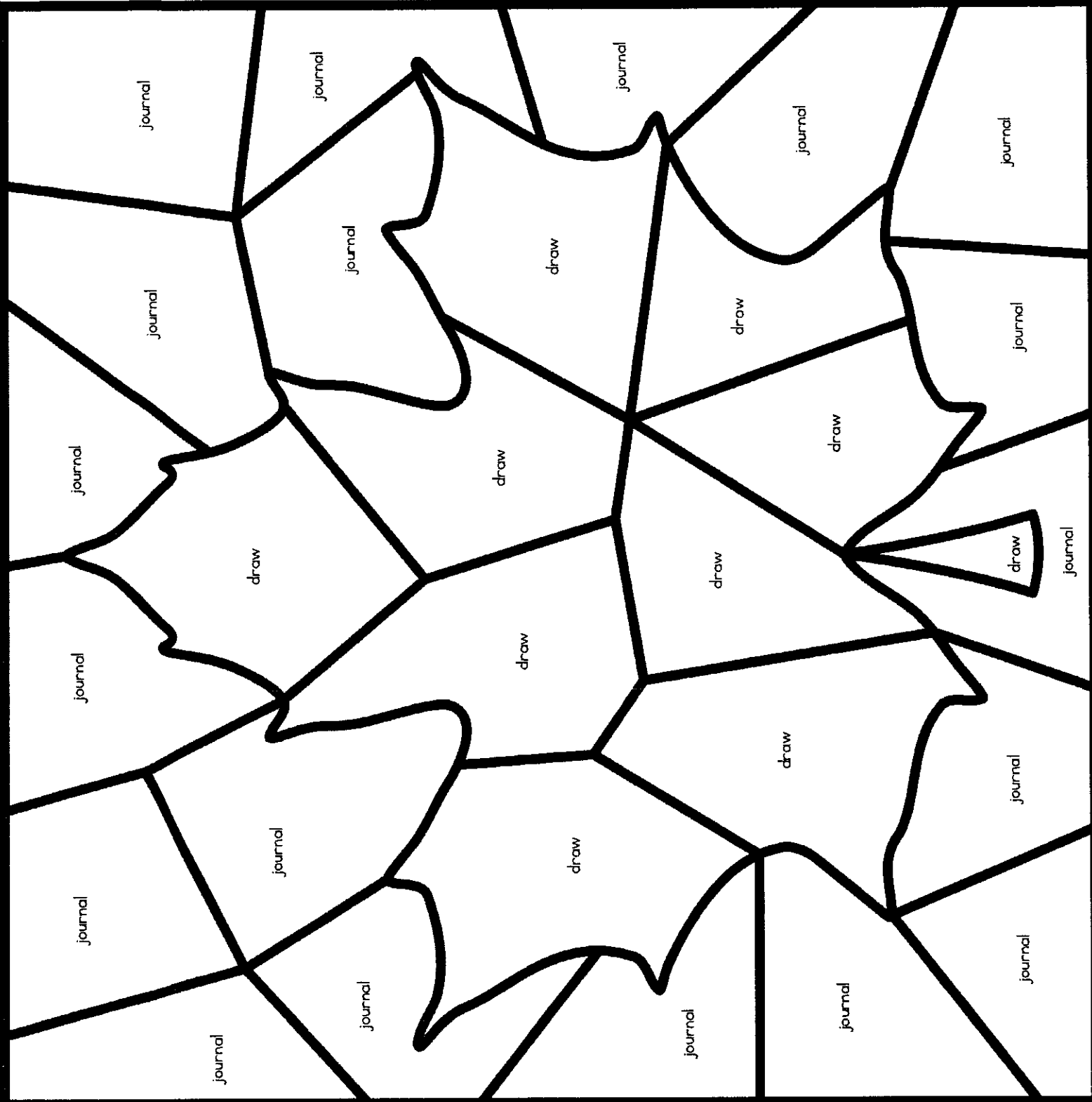
# COLOR BY COPING SKILL



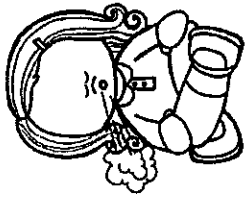
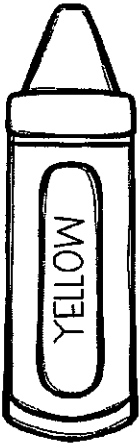
Write in a journal



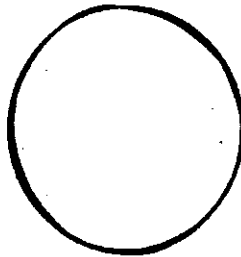
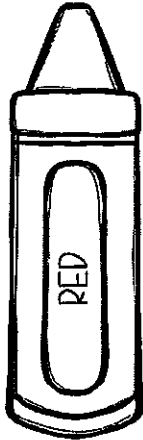
Draw or color



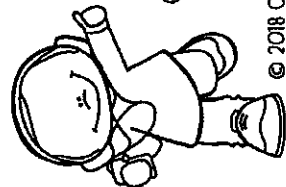
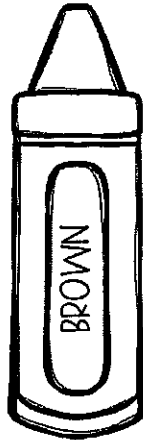
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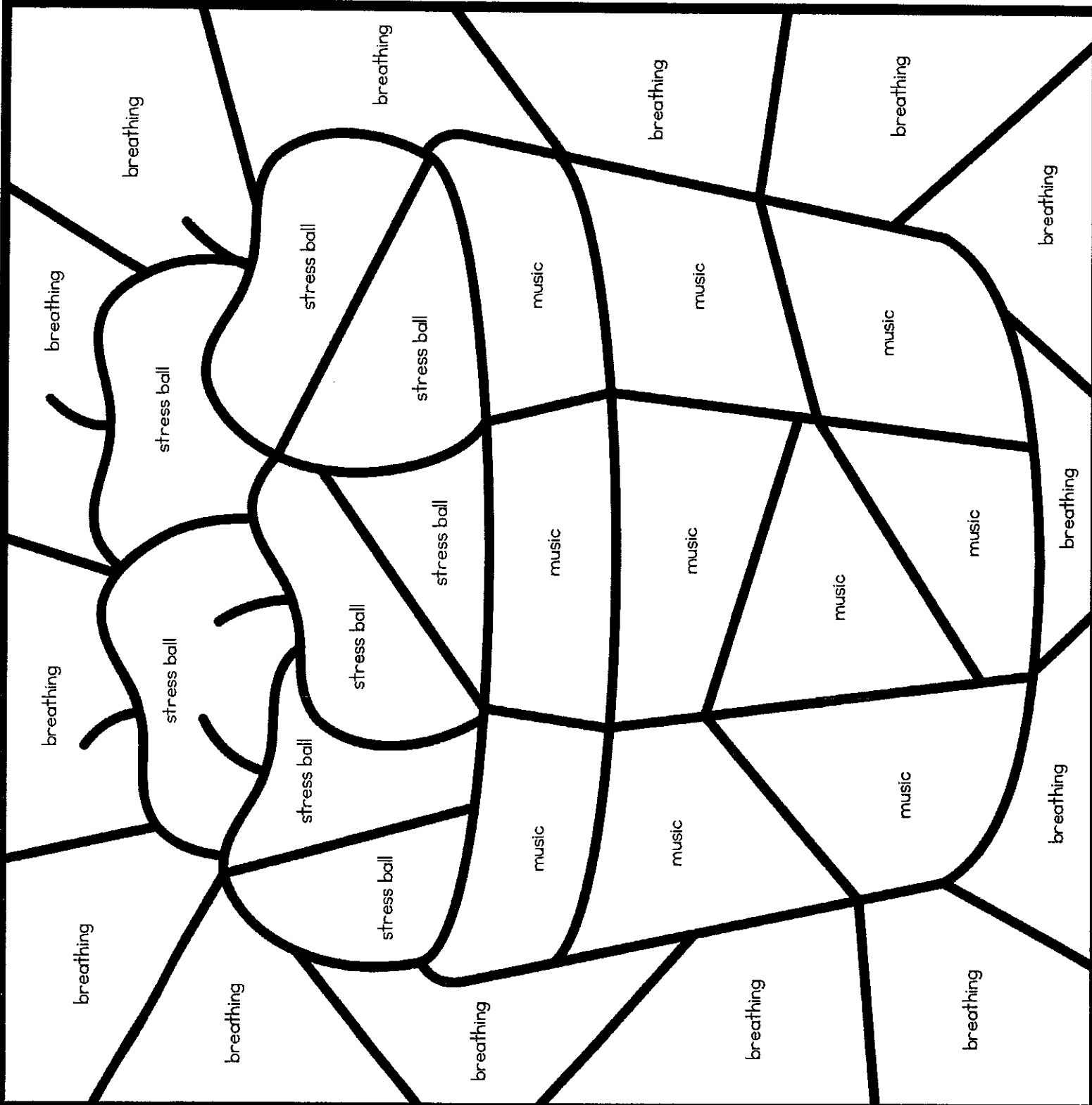
Control your  
breathing



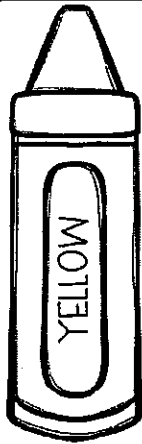
Squeeze a  
stress ball



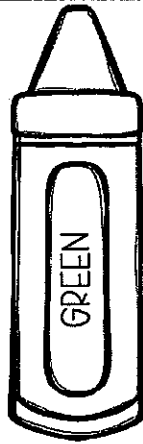
Listen to  
calming music



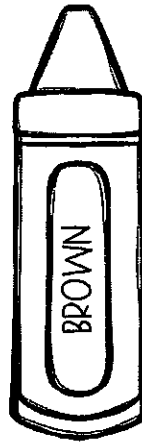
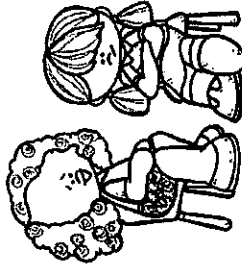
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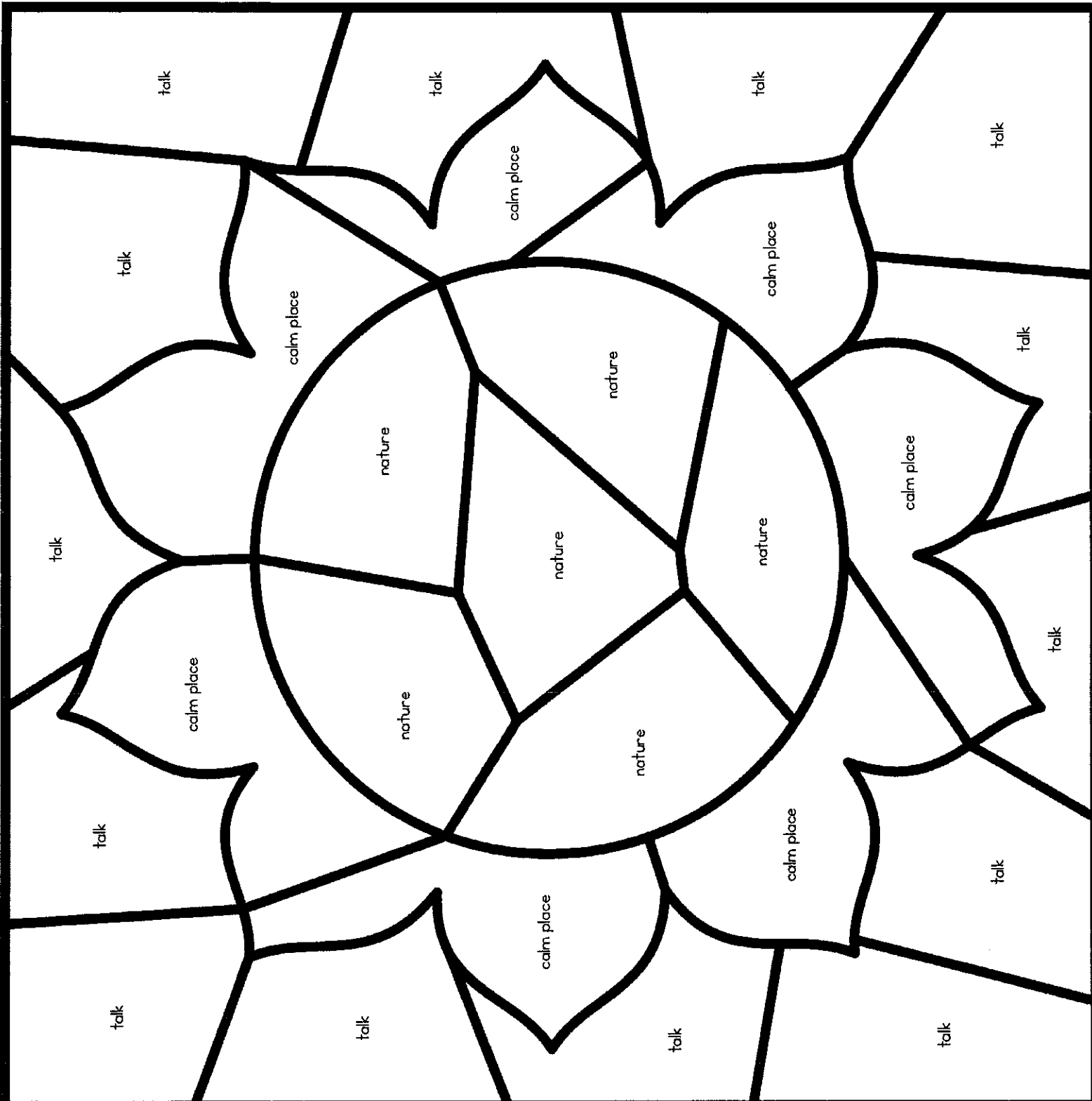
Picture a calm, happy place



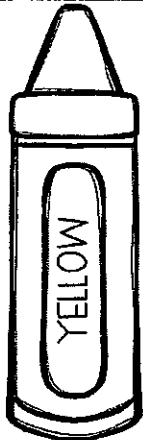
Talk with someone you trust



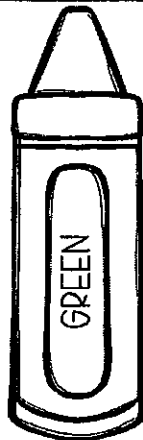
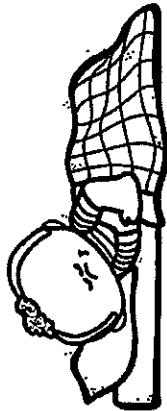
Spend time in nature



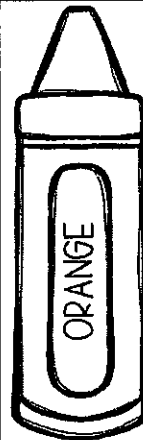
# COLOR BY COPING SKILL



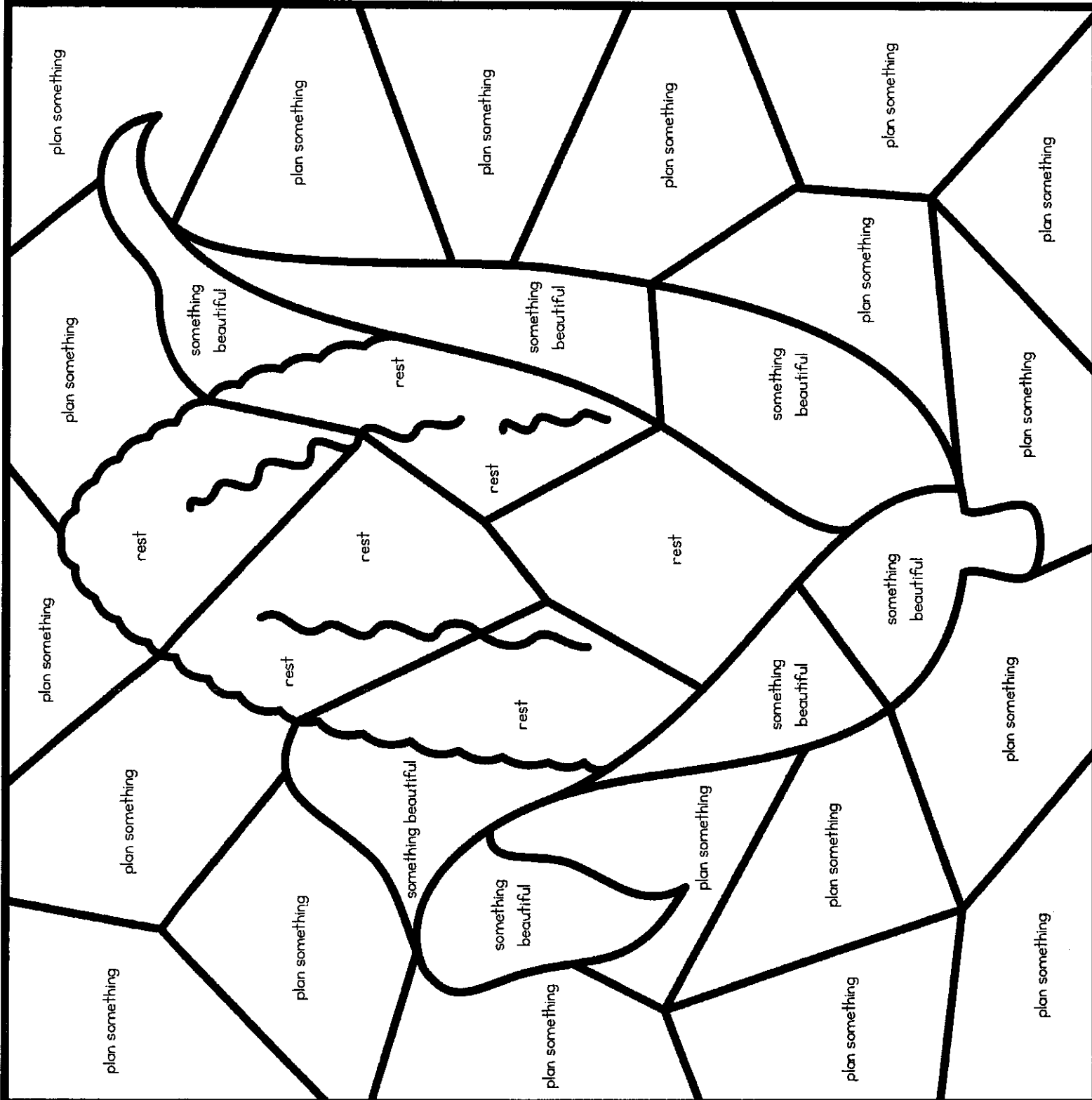
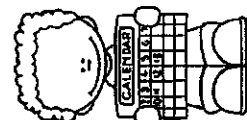
Get enough rest



Look around  
for something  
beautiful



Plan something  
to look  
forward to





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