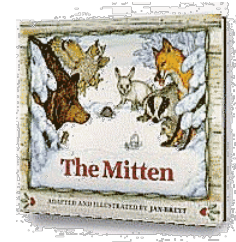


An NWO Hands-On STEM Activity

Mathematics and Language Arts with *The Mitten* by Jan Brett



Suggested Grade Levels: preK-3

Standards Alignment: *Geometry* K, 1, & 2. *Measurement and Data* K, 1, 2, & 3

Materials:

- Mitten cutout* (one per group)
- Animal cutout* (enough animals so that each group has one) – rabbit, hedgehog, etc.
- Linking cubes
- A leather or cloth mitten and a knit mitten
- *The Mitten* by Jan Brett

[*Link to Mitten and Animal Cutouts](#)

Connecting the Text:

1. Ask students: “How many of you wear mittens? How many of you wear gloves? Are your mittens or gloves made of stretchy material?”
2. Show students a mitten made of stretchy yarn and another made of leather. Ask students which one they think will stretch and why. Explain that you are going to read a story about a very stretchy mitten.

Questioning the Author:

This activity will help students comprehend what they are reading

1. Tell students: “The author, Jan Brett, means for the story to be funny. She wrote some things in the book that made me wonder what could really fit into that mitten. As we read the book, let’s think about what could really fit into a mitten.”
2. Read the book aloud - stopping to ask after each animal moves into the mitten whether or not students think that animal might fit.
3. Tell students: “While we were reading, we came up with the idea that some of the animals probably could fit into a stretchy mitten, but not at the same time. We didn’t think that a bear or a fox could ever fit inside the mitten but which smaller animals did we think might fit?”
4. “Now, let’s use a paper mitten about the size of the one in the story and see about how big that mitten was.”

How Big Is the Mitten? A Mathematics Lesson on the area of a 2-dimensional object – *Part 1*

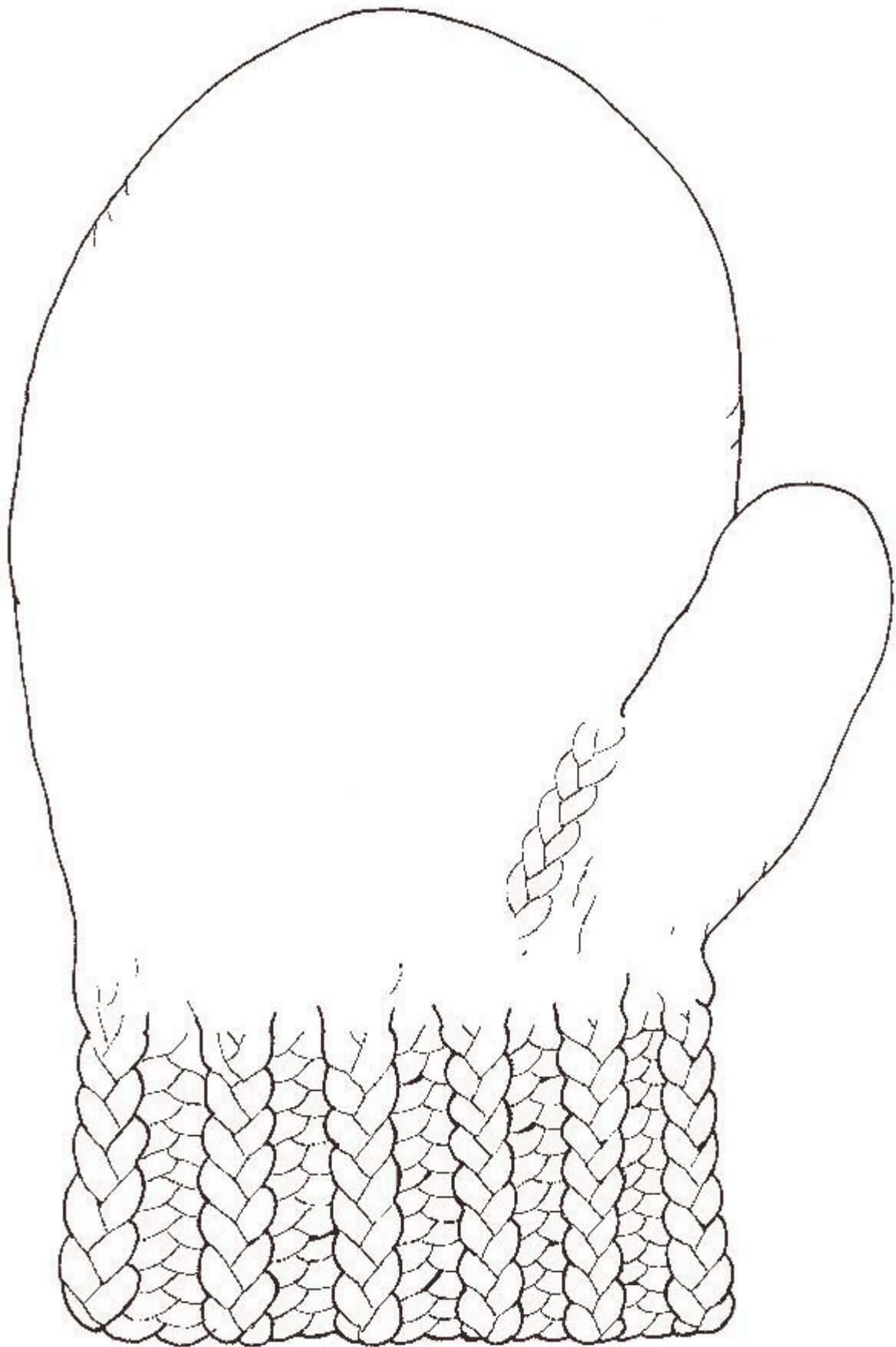
1. Divide students into pairs or groups of three.
2. Show all students the mitten cutout and several linking cubes. Ask students to estimate how many cubes would completely cover the mitten. Record student estimates and ask students to explain how they figured out their estimate and why they believe it is correct.
3. Provide one mitten cutout and several linking cubes for each pair or group. Ask students to completely cover the mitten with cubes. Be sure to explain that no cubes should hang over the edge of the mitten.
4. Draw a line plot on chart paper. Ask student groups to make an X to mark how many cubes they fit on their mitten.
5. Lead a discussion about the data, including an informal discussion of both **range** (everyone in the class was between ___ and ___) and **mode** (most groups were able to fit about ___ cubes on their mittens) to introduce the mathematical statistics vocabulary. Tell students that when mathematicians talk about *covering an object*, they are talking about the **area** of the object.

How Big Are the Animals? A Mathematics Lesson on the area of a 2-dimensional object – *Part 2*

1. Show all students the animal cutouts. Tell students these cutouts are the actual size of the animals. Ask students to estimate how many cubes would completely cover each animal. Record student estimates.
2. Now give each pair or group of students a cutout of one of the animals believed to be able to fit in the mitten. Have each group use their linking cubes to determine the area of the animal.
3. Ask each group to report on the number of linking cubes that covered their animal. Then have students compare that data to the number of cubes they determined would cover the mitten. Which animals might fit inside?

Remind students that in reality the mitten is stretchy and the animals are three-dimensional, so this kind of measurement is just a best guess. Ask students if they know a way that we could better predict how an animal would fit inside the mitten if we can’t use real animals.

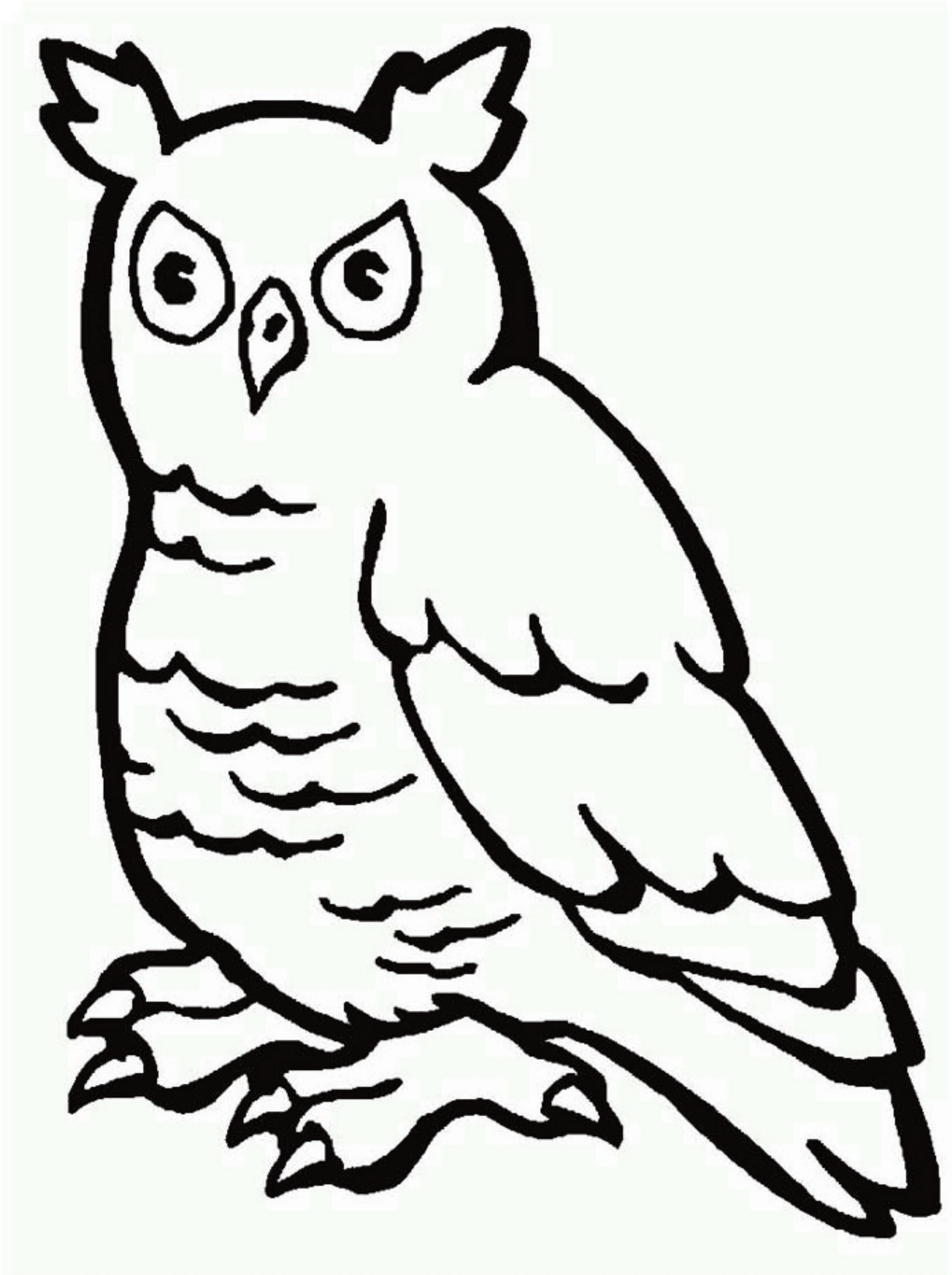
Adapted from Mathwire.com from tkawas@mathwire.com



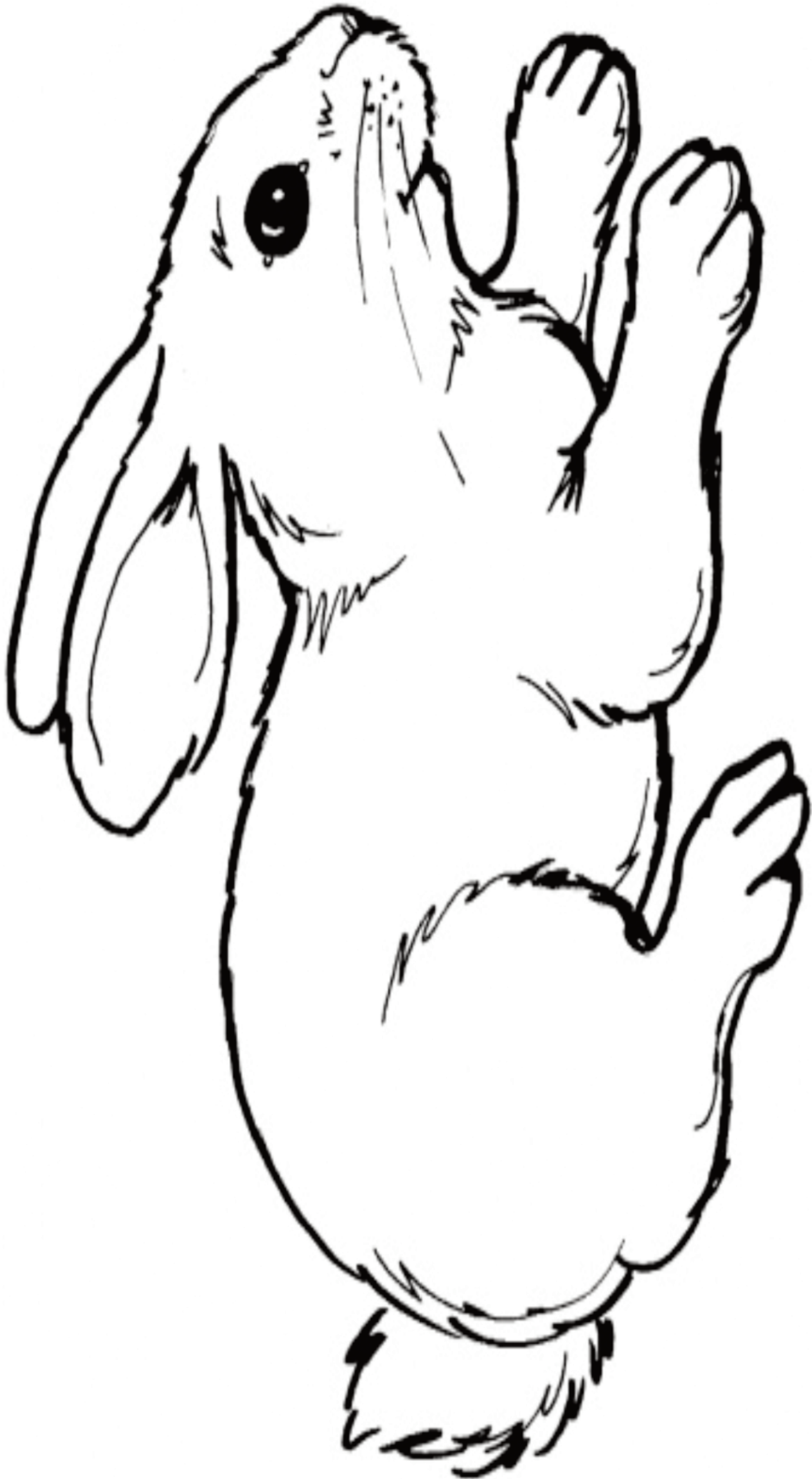








Needs to be printed on 11x17 paper



Needs to be printed on 11x17 paper