

Fish Scale Drawing Activity

A 2x Enlargement

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Area



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Fish Scale Drawing Activity Teacher Instructions

*I would advise showing the step by step slides with pictures I've provided as students complete each step. This will help them a lot. I also find it easiest to complete the first 4 steps as a class, making each student wait until everyone has completed that step. Then they can take their time in the drawing stage. This will make everything easier. ☺

Step 1: Copy, cut and distribute the 3.5 by 5 inch fish cards on slide 3. Be sure to leave a little extra white around the black outline for students to draw past if needed. I find it easiest to cut the cards myself instead of leaving it to the students. You can distribute the step by step student instructions page or just guide students verbally. This really is your preference. Make sure students write their name on the back of the card for easy reference.

Step 2: Have each student make $\frac{1}{2}$ inch lines both vertically and horizontally across the entire fish card picture. (See slide 9, step 1) They can start with hash marks across the top and side and then they can draw the lines to make a grid. Remind students that this is a 2x enlargement so they will be taking the sketch on $\frac{1}{2}$ squares and transferring it to 1 inch squares. This is a good time to discuss why they are completing this scale drawing activity. *** Students will ask if it's okay if they didn't get all their lines to fit perfectly at $\frac{1}{2}$ inch. This is fine. They might have some squares on the end that are smaller than $\frac{1}{2}$ inch. The example on slide 9 shows this.**

It is a good idea to have a few pre-made cards for students who may need help, an extra copy because their lines aren't straight, or are absent. You can make one copy by hand and photocopy the rest to have in case. Make sure students are using $\frac{1}{2}$ inch lines not centimeter and make sure their lines are straight. They should be using the ruler to draw the lines. I know this sounds silly, but some students try to free hand the lines. If a student has completed this step rather quickly, have them go around to help assist other students.

Step 3: Have students label their axes as seen in slide 10, step 2. Make sure the very far left corner is shaded in and they begin 1-9 to the right and A-F or G going up. This will make it easier for them to draw their enlarged picture.

Fish Scale Drawing Activity Teacher Instructions Continued

Step 4: Copy and distribute the 1 by 1 inch grid paper. (Slide 4) Have students label their axes exactly as they did on the fish card in the step above. See slide 11, step 3. Make sure they write in their labels lightly so they can be erased after the final drawing is complete. Make sure their name is on the back of the grid paper for easy reference.

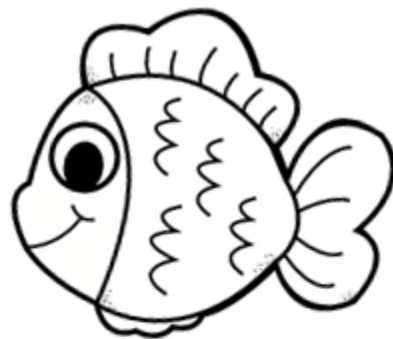
Step 5: Students begin illustrating their enlarged drawing. (Slide 12, step 4) Make sure students understand that they don't just draw freely from sight. They need to follow the axes labels to make sure the element they are sketching from the small picture coincides with the numbers and letters on the larger grid paper. This is the time where students have the freedom to take their time. Make sure they erase thoroughly if necessary and periodically check as they draw. I demonstrate how to use the axes to help them before having them begin on their own.

Step 6: Once the enlargement is complete, students erase the axes labels and color the final product to their liking. (Slide 13, step 5) I always advise students to use crayons or colored pencils, not markers, and remind them not to have the coloring take away from the fish which is showing the size change completed. They can add things like in the sample of the final I provided; rocks, bubbles, etc. Students can cut the top row off if they wish or add color to it.

Step 7: On the back of their final copy, students write a brief description of the size- change factor they created and their understanding of the task they completed. How does it relate to what they have been studying?

Step 8: Score the final copy using the rubric provided (slide 8) and display on a bulletin board/wall , if you choose to, using the title page provided on slide 2. If you prefer to score students a different way, please do so. The rubric is just a basic measuring tool. The students really love this activity but some do get discouraged. I always tell them that they don't need to be a great drawer to be successful at this activity. I try to not to make this a major grade, but I do grade it because it takes some time to complete.

Fish Scale Drawing Activity Student Instructions



Step 1: Write your name on the back of the fish card.

Step 2: Make $\frac{1}{2}$ inch lines both vertically and horizontally across the entire fish card picture. Make sure you are using $\frac{1}{2}$ inch lines not centimeter and make sure your lines are straight. Use the ruler to draw your lines.

Step 3: Label your axes. Make sure the very far left corner is shaded in and begin 1-9 to the right and A-F or G going up. This will make it easier for you to draw the enlarged picture.

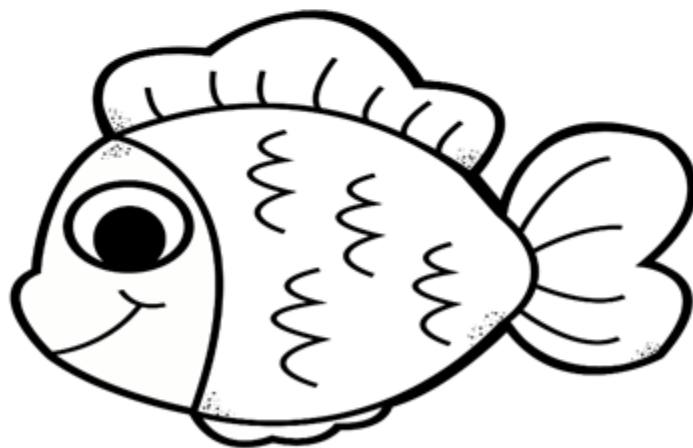
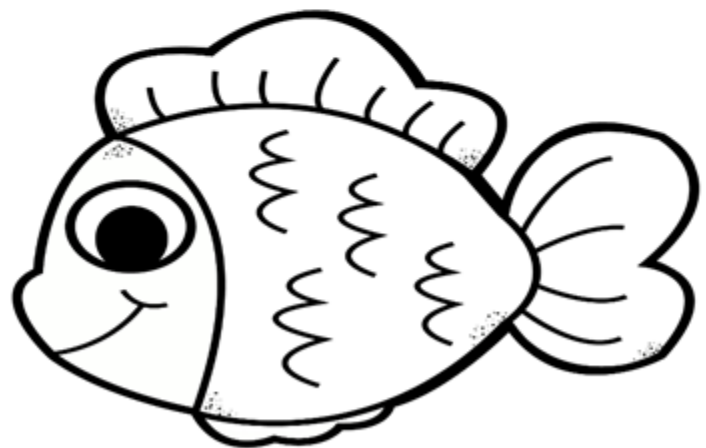
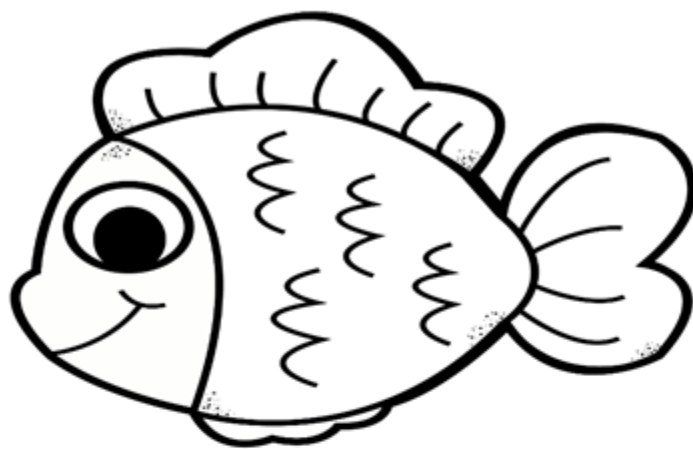
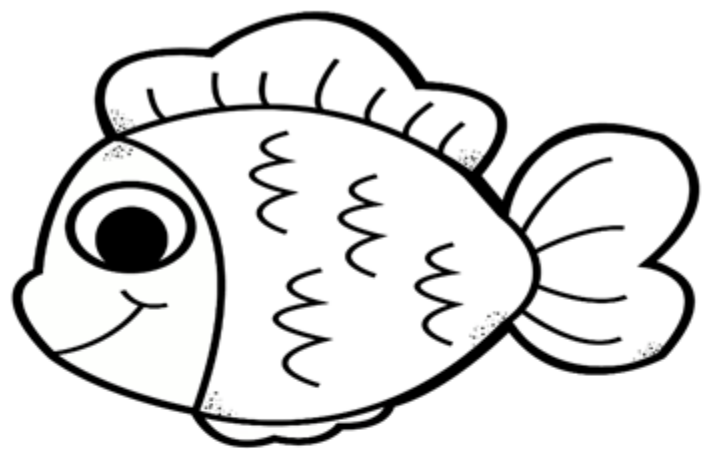
Step 4: Put your name on the back of the 1 by 1 inch grid paper. Label the axes exactly as you did on the fish card in the step above. Make sure to write labels lightly so they can be erased after the final drawing is complete.

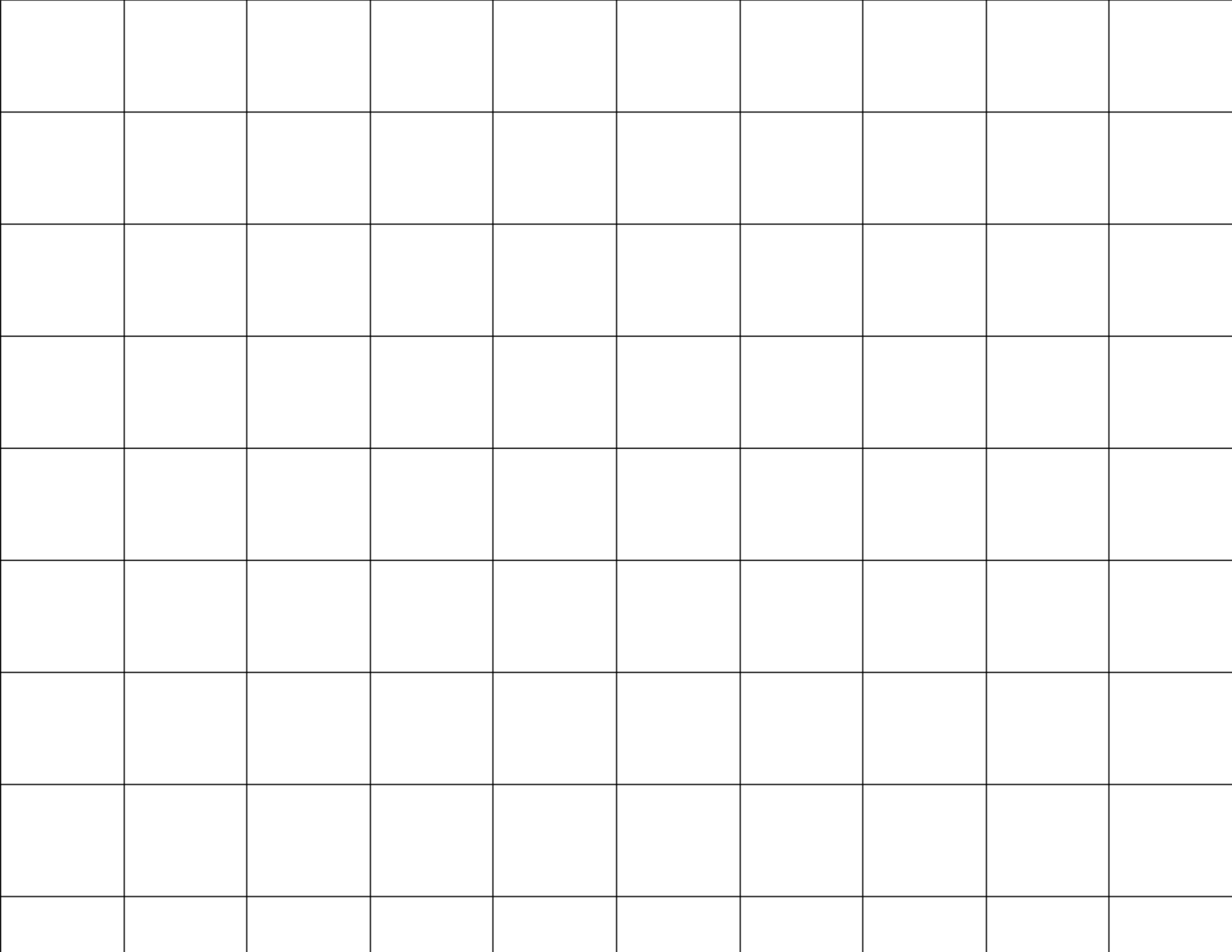
Step 5: Begin illustrating your enlarged drawing. Remember, don't just draw freely from sight. You need to follow the axes labels to make sure the element you are sketching from the small picture coincides with the numbers and letters on the larger grid paper. Take your time and erase thoroughly if necessary. TAKE YOUR TIME!!

Step 6: Once the enlargement is complete, erase the axes labels and color the final product to your liking. Use crayons or colored pencils, not markers, and don't let your coloring take away from the fish which is showing the size change completed. You may add things to the picture to give it character.

Step 7: On the back of your final copy, write a description of the size-change factor you created and explain why this task, a scale drawing, was a good way to show this.

Step 8: Turn in your final copy with your small fish card.





Fish Scale Drawing Scoring Rubric

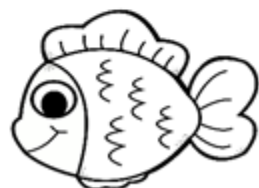
Fish card complete with
 $\frac{1}{2}$ inch squares. **2 points**

Enlargement shown accurately
on 1-inch grid paper. **3 points**

Enlargement neat and free of
erasure marks that take away
from the sketch. **2 points**

Enlargement is creatively colored.
2 points

Enlargement has a brief
description of the size-change
factor and shows student's
understanding of the task.
3 points



Your score:

_____ / 12

Fish Scale Drawing Scoring Rubric

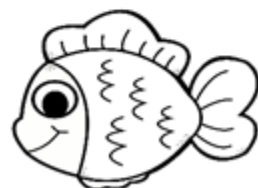
Fish card complete with
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Enlargement shown accurately
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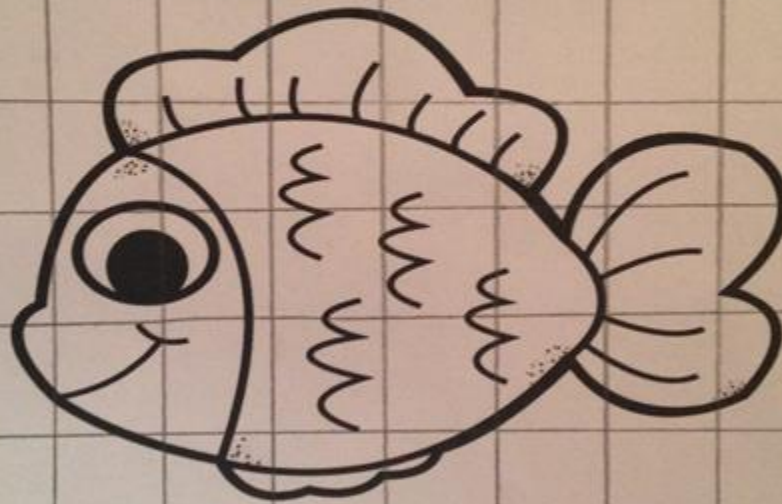


Your score:

_____ / 12

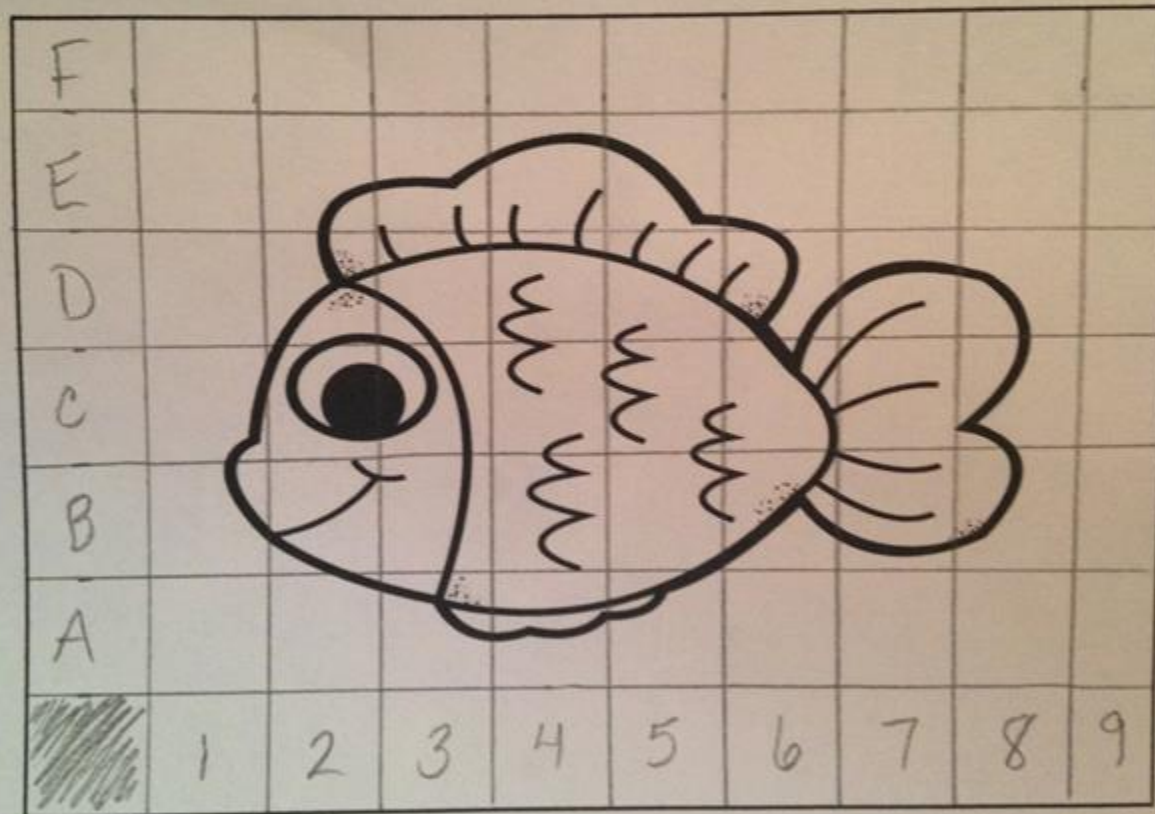
STEP 1

$\frac{1}{2}$ inch by $\frac{1}{2}$ inch



STEP 2

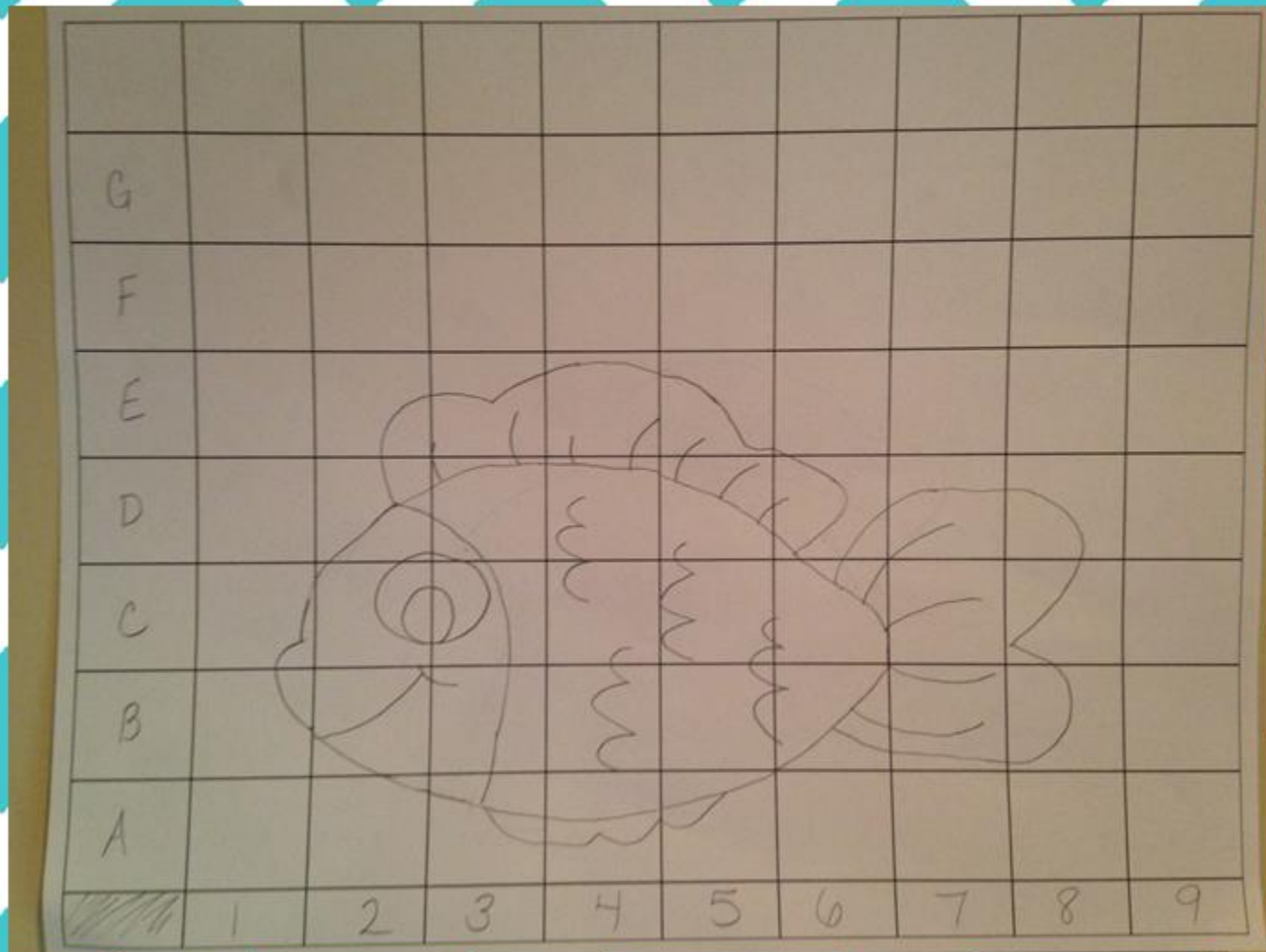
$\frac{1}{2}$ inch by $\frac{1}{2}$ inch



STEP 3

G									
F									
E									
D									
C									
B									
A									
	1	2	3	4	5	6	7	8	9

STEP 4



STEP 5



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