Math Released Item 2021 Grade 3

Fractions Number Line M300560D

Prompt

M300560D

The location of point G is shown on this number line. The number line is divided into equal-sized parts.



- What fraction represents the location of point G? Use the number line to explain how you got your answer.
- Explain how to plot $\frac{5}{3}$ on a number line.

Rubric

M300560D Analytic Rubric		
Score	Description	
	The response includes the following 4 elements:	
	 Computation = 1 point: Correct fraction to represent the location of point <i>G</i>: ²/₆ or equivalent Reasoning = 1 point: Valid explanation using the number line to determine the location of point <i>G</i> Reasoning = 1 point: Valid explanation of how to mark the spaces between the whole numbers to show thirds Reasoning = 1 point: Valid explanation of how to plot ⁵/₃ on a number line 	
4	Sample Student Response:	
	The distance from 0 to $\frac{3}{6}$ is divided into 3 equal-sized parts, so each part is $\frac{1}{6}$. Point <i>G</i> is located at the mark that is 2 parts to the right of 0, so it is located at $\frac{2}{6}$. To plot $\frac{5}{3}$ on a number line, I first need to mark each space between whole	
	number line. I will plot my point at 5 marks to the right of 0 on the number line to show $\frac{5}{3}$.	
	Or other valid response.	
3	Student response includes 3 of the 4 elements.	
2	Student response includes 2 of the 4 elements.	
1	Student response includes 1 of the 4 elements.	
0	Student response is incorrect or irrelevant.	

Anchor Set A1 – A15 With Annotations

Anchor papers are labeled using a capital "A" followed by the sequence number (e.g., A1, A2).

Anchor papers include

- The prompt.
- The student response.
- A score in the top right corner.

The annotation follows the anchor paper, and

- \circ Is aligned to the rubric.
- Contains parts of the student response(s) that, based on the rubric, support the scoring of each element.
- Reflects the original spelling and grammar of student response(s).
 - Example of scoring element within an annotation, with student response language (in parentheses):

The correct fraction to represent the location of point G is given (the fracktion equeals $\frac{2}{\epsilon}$).

• May contain Scoring Decisions or clarifying notes.

The Anchor Set section is followed by a practice set with a scoring matrix. Annotations are not included in the Practice Set section.



- What fraction represents the location of point G? Use the number line to explain how you got your answer.
- Explain how to plot $\frac{5}{3}$ on a number line.



Anchor Paper 1

Score Point 4

This response receives full credit. It includes all of the four required elements.

- The correct fraction to represent the location of point G is given (the fraction is $\frac{2}{6}$).
- A valid explanation using the number line to determine the location of point G is given (hop and stop at 1 and one is $\frac{6}{6}$ and the mildle is $\frac{3}{6}$ so then go to the G and it will be $\frac{2}{6}$). The response shows understanding that the number line is divided into sixths and that each increment represents one sixth.
- A valid explanation of how to mark the spaces between the whole numbers to show thirds is given in the form of a drawing of a line segment correctly divided into thirds. The (1) above the $(\frac{3}{3})$ shows understanding that each whole is divided into thirds. Although the drawing provides a line segment instead of a number line with arrows, sufficient understanding is shown.
- A valid explanation of how to plot $\frac{5}{3}$ on the number line is given in the drawing box, and shows the fraction correctly placed on the line segment.



What fraction represents the location of point G? Use the number line to explain how you got your answer.
Explain how to plot ⁵/₃ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

So first lets talk about what point G is. We are suppose to use a number line. There are six points on the number line and point G is on the 2 point there is on the number line. So lets now look whats by the 2 point. Just like any number 1 is by 2 and so is 3. But wait, $\frac{3}{6}$ is on the number line and that is equeal to $\frac{1}{2}$. So point G on the number line is $\frac{2}{6}$. Below I made a number line and circled $\frac{2}{6}$. That is my explenation on what point G is. Now lets talk about how you could put $\frac{5}{3}$ on a number line. so you could have the denominator as 3 but make there be two wholes. So now we could make $\frac{5}{3}$ on a number line. Below I will make a number line with 2 wholes and the denomatoir as 3. That is how you make $\frac{5}{3}$ on a number line. That is my explaining for those 2 promblems.



Anchor Paper 2

Score Point 4

This response receives full credit. It includes all of the four required elements.

- The correct fraction to represent the location of point G is given (point G on the number line is $\frac{2}{6}$).
- A valid explanation using the number line to determine the location of point G is given (there are six points [marks] on the number line. So lets look at what is by the 2 point. Just like any number 1 is by 2 and so is 3. But wait, $\frac{3}{6}$ is on the number line and that is equeal to $\frac{1}{2}$. So point G on the number line is $\frac{2}{6}$). The drawing box shows a number line that is not labeled and not acceptable by itself, but it helps support the explanation.
- A valid explanation of how to mark the spaces between the whole numbers to show thirds is given (you could have the denominator as 3 but make there be two wholes) along with a drawing of a number line that is divided into thirds. The number line labels the whole numbers (1, 2), and clearly divides the wholes into thirds.
- A valid explanation of how to plot ⁵/₃ on the number line is given in the form of a drawn number line that clearly divides each whole into thirds, with one increment marked along with the explanation (Below I will make a number line with 2 wholes and the denomatoir as 3. That is how you make ⁵/₃ on a number line). Neither the explanation nor the drawing box is sufficient by itself since the fraction ⁵/₃ is not labeled on the drawing, but the entire response shows the fraction is correctly marked on the number line.



• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.



Anchor Paper 3

Score Point 4

This response receives full credit. It includes all of the four required elements.

- The correct fraction to represent the location of point G is given (G is $\frac{2}{c}$).
- A valid explanation using the number line to determine the location of point G is given (number line is split into sixths and if you count up to G the numanator is 2) as supported by the drawn number line that correctly divided into sixths with a mark correctly placed on the location of $\frac{2}{6}$.
- A valid explanation of how to mark the spaces between the whole numbers to show thirds is given $(\frac{5}{3} = \frac{10}{6}$ because $6 \div 3 = 2$ so every 2 sixth tick mark is $\frac{1}{3}$).
- A valid explanation of how to plot $\frac{5}{3}$ on the number line is given in the form of a number line in the drawing box. $\frac{5}{3}$ is correctly placed on the number line.



• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

After evaluating I learned that the fraction on point G would be $\frac{2}{6}$ because i counted the spaces between 0 and 1 which are the 2 consequative whole numbers and i got 6 spaces and i syoped at ponit G because that is what we are going to figure ou and i got $\frac{2}{6}$ and how could plot $\frac{5}{3}$ on the numberline is i could put 3 whole numbers instead of 2 and put 3 spaces between the whole numbers. So this proves the point on G is $\frac{2}{6}$ and how i can put $\frac{5}{3}$ on the number line.



Anchor Paper 4

Score Point 3

This response receives partial credit. It includes three of the four required elements.

- The correct fraction to represent the location of point G is given (point G would be $\frac{2}{6}$).
- A valid explanation using the number line to determine the location of point G is given (I counted the spaces between 0 and 1 which are the 2 consequative whole numbers and I got 6 spaces and I syoped [stopped] at ponit G . . . and I got $\frac{2}{\epsilon}$).
- A valid explanation of how to mark the spaces between the whole numbers to show thirds is given (I could put 3 whole numbers instead of 2 and put 3 spaces between the whole numbers).

No explanation of how to plot $\frac{5}{3}$ on the number line is given. Although the response explains how to draw the number line, it does not explain how to plot the fraction $\frac{5}{3}$.



- What fraction represents the location of point G? Use the number line to explain how you got your answer.
- Explain how to plot $\frac{5}{3}$ on a number line.



Anchor Paper 5

Score Point 3

This response receives partial credit. It includes three of the four required elements.

- The correct fraction to represent the location of point G is given (point G is $\frac{2}{\epsilon}$).
- A valid explanation of how to mark the spaces between the whole numbers to show thirds is given in the form of a number line that is clearly divided into thirds along with the supporting explanation (I would plot ⁵/₃ on the number line by putting a 1 at half and a 2 at the end because ⁵/₃ is over the whole which is ³/₃). The written explanation is vague and not sufficient by itself, but the number line is sufficient by itself.
- A valid explanation of how to plot $\frac{5}{3}$ is given in the form of a number line that clearly divides each whole into thirds and correctly marks and labels the fraction $\frac{5}{2}$.

No explanation using the number line to determine the location of point G is given.



• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

You can make the number line longer so you can add another whole to it and then put $\frac{5}{3}$ on the number line.3 is the denominator and 3 is half to 6 so you make the number line and make the number line under the other and make the denominator 3.In the number line that is shown up top the fraction where point G is the fraction $\frac{2}{6}$.



Anchor Paper 6

Score Point 3

This response receives partial credit. It includes three of the four required elements.

- The correct fraction to represent the location of point G is given (point G is the fraction $\frac{2}{6}$).
- A valid explanation of how to mark the spaces between the whole numbers to show thirds is given in the form of a number line that is clearly divided into thirds along with the supporting explanation (make the number line longer so you can add another whole to it and then put $\frac{5}{3}$ on the number line.3 is the denominator and 3 is half of 6 so you can make the number line under the other and make the denominator 3.) Although the number line does not show the whole number 2, and therefore the area between 1 and 2 is not clearly divided into thirds, the (1) above the $(\frac{3}{3})$ shows understanding that each whole needs to be divided into thirds. The written explanation is vague and not sufficient by itself, but the number line is sufficient by itself.
- A valid explanation of how to plot $\frac{5}{3}$ is given in the form of a number line that is clearly divided into thirds, and $\frac{5}{3}$ is marked and labeled. It is acceptable to use the label G to represent the fraction $\frac{5}{2}$.

No explanation using the number line to determine the location of point G is given.



• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.



Drawing Box



Anchor Paper 7

Score Point 2

This response receives partial credit. It includes two of the four required elements.

- The correct fraction to represent the location of point G is given (G is on $\frac{2}{6}$).
- A valid explanation using the number line to determine the location of point G is given in the form of a number line that is correctly divided into sixths and the dot placed on the location of $\frac{2}{6}$, as explained in the answer box (the first number is 0 and the secont fraction is $\frac{1}{6}$ I know that it is $\frac{2}{6}$ because the midile fraction is $\frac{3}{6}$ so that means that it2 is $\frac{2}{6}$). Each of the answer box and the drawing box is acceptable for credit by itself.

An incorrect explanation of how to mark the spaces between the whole numbers to show thirds is given in the form of a number line that is divided into sixths instead of thirds. The number line ends at 1 instead of 2, and $\frac{3}{3}$ is not marked as 1.

An incorrect explanation of how to plot $\frac{5}{3}$ is given in the form of a number line that labels $\frac{5}{6}$ as $\frac{5}{3}$.



• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

After solving I learned that how you can plot $\frac{5}{3}$ on a number line is, you have to draw your number line with thirds and then you put two wholes on the number line after that you label your tick marks $\frac{1}{3}$ all the way until you get to $\frac{5}{3}$. This means that you have to do all the right steps and pay attention to what you aredoing if you do number line.



Anchor Paper 8

Part C: Score Point 1

Anchor Paper 8 Score Point 2

This response receives partial credit. It includes two of the four required elements.

- A valid explanation of how to mark the spaces between the whole numbers to show thirds is given (you have to draw your number line with thirds then you put two wholes on the number line).
- A valid explanation of how to plot $\frac{5}{3}$ on the number line is (after that you label your tick marks $\frac{1}{3}$ all the way until you get to $\frac{5}{3}$). This explanation describes drawings like Anchor Papers 1 and 5.

No fraction to represent the location of point G is given.

No explanation using the number line to determine the location of point G is given.



- What fraction represents the location of point G? Use the number line to explain how you got your answer.
- Explain how to plot $\frac{5}{3}$ on a number line.



Anchor Paper 9

Score Point 2

This response receives partial credit. It includes two of the four required elements.

- The correct fraction to represent the location of point G is given $(\frac{2}{6})$. The explanation (it's 2 6ths) is also acceptable for credit.
- A valid explanation using the number line to determine the location of point G is given (there are 6 spaces G is on the 2nd line so...it's 2 6ths).

No explanation of how to mark the spaces between the whole numbers to show thirds is given.

No explanation of how to plot $\frac{5}{3}$ on the number line is given.



- What fraction represents the location of point G? Use the number line to explain how you got your answer. Explain how to plot $\frac{5}{3}$ on a number line.



Anchor Paper 10

Score Point 1

This response receives partial credit. It includes one of the four required elements.

• The correct fraction to represent the location of point G is given (The fraction for G is $\frac{2}{6}$).

No explanation using the number line to determine the location of point G is given.

No explanation of how to mark the spaces between the whole numbers to show thirds is given.

An incorrect explanation of how to plot $\frac{5}{3}$ on the number line is given (find $\frac{5}{3}$ by starting one after 0 and then count to 5 and see were you get). Without first dividing the number line into thirds, counting to 5 will result in an incorrect placement of the fraction.



- What fraction represents the location of point G? Use the number line to explain how you got your answer.
- Explain how to plot $\frac{5}{3}$ on a number line.



Anchor Paper 11

Score Point 1

This response receives partial credit. It includes one of the four required elements.

• The correct fraction to represent the location of point G is given $(\frac{2}{6})$.

An incorrect explanation using the number line to determine the location of point G is given in the form of a line segment that does not label 0 and 1, and is not clearly divided into sixths. Contrast with correct drawings of the number line on Anchor Papers 2 and 3.

No explanation of how to mark the spaces between the whole numbers to show thirds is given.

No explanation of how to plot $\frac{5}{3}$ on the number line is given.



- What fraction represents the location of point G? Use the number line to explain how you got your answer.
- Explain how to plot $\frac{5}{3}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

 G repsent $\frac{2}{6}$

 Drawing Box

 Image: Imag

Anchor Paper 12

Score Point 1

This response receives partial credit. It includes one of the four required elements.

• The correct fraction to represent the location of point G is given (G repsent $\frac{2}{c}$).

No explanation using the number line to determine the location of point G is given.

An inadequate explanation of how to mark the spaces between the whole numbers to show thirds is given. A number line is drawn, but labels are not provided for the whole numbers, so it does not show a number line divided into thirds.

An inadequate explanation of how to plot $\frac{5}{3}$ on the number line is given in the form of a drawn number line in the drawing box that shows a tick mark labeled ($\frac{5}{3}$). Since the number line is not correctly divided into thirds, the fraction would not be placed correctly.



- What fraction represents the location of point G? Use the number line to explain how you got your answer.
- Explain how to plot $\frac{5}{3}$ on a number line.



Anchor Paper 13

Score Point 0

This response receives no credit. It includes none of the four required elements.

An incorrect fraction to represent the location of point G is given (its 2).

An incorrect explanation using the number line to determine the location of point G is given (it starts with 0 and to 1 and then 2 that's where point g is). The number line in the drawing box is also incorrect as it shows whole numbers and not fractions.

No explanation of how to mark the spaces between the whole numbers to show thirds is given.

No explanation of how to plot $\frac{5}{3}$ on the number line is given.

Anchor Paper 14

Score Point 0

This response receives no credit. It includes none of the four required elements.

No fraction to represent the location of point G is given.

No explanation using the number line to determine the location of point G is given.

An incorrect explanation of how to mark the spaces between the whole numbers to show thirds is given (split it into 5 parts). The drawing also shows the number line divided into fifths instead of thirds.

An incorrect explanation of how to plot $\frac{5}{3}$ on the number line is given (jump 3 parts). The drawing also shows an incorrect understanding.



- What fraction represents the location of point G? Use the number line to explain how you got your answer. Explain how to plot $\frac{5}{3}$ on a number line.



Anchor Paper 15

Score Point 0

This response receives no credit. It includes none of the four required elements.

An incorrect fraction to represent the location of point G is given (G stands for $\frac{3}{r}$).

An incorrect explanation using the number line to determine the location of point G is given (the number line shows every number that can do thirds like $\frac{3}{3} \cdot \frac{3}{4} \frac{3}{5}$).

No explanation of how to mark the spaces between the whole numbers to show thirds is given.

No explanation of how to plot $\frac{5}{3}$ on the number line is given.

Practice Set 1 P1-1 - P1-10

Annotations Not Included



• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

point G is $\frac{3}{5}$ because it is right next to $\frac{3}{6}$ and it is on the left meaning it is lower so it is $\frac{3}{5}$. Since $\frac{5}{3}$ is an improper fraction you have to convert it into $1 \frac{2}{3}$ so then you would place it where $1 \frac{2}{3}$ should be which is right next to $1 \frac{1}{3}$ which is right next to 1.







• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

My fraction is $\frac{2}{6}$ because its right before the mid-point of sixths. To plot $\frac{5}{3}$ you have to make a number line and label it 0 to 2. Then partition each whole into thirds. Label each fraction. $\frac{5}{3}$ is clearly after 1 whole. It is the one before $\frac{6}{3}$.







• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.





• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

The fraction for G on the line is $\frac{2}{5}$ because number on the botum is haw meny thar it all to gethr and the top number is whare ploted no the line and 1 and the ones behind it makes helps make the top number to.

To plot $\frac{2}{5}$ on the line you can look for the second line but the line with the 0 under it doues not cawnt so you can look for the socond line.

Drawing Box





• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.





• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.





• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

How i got it is i drawed a number line and put 6 lines then i counted to three then i counted the hole number and i got 3 and 6.





• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{2}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

The G point is $\frac{2}{6}$ because before $\frac{3}{6}$ the number is two sixths. The numorator is counting 1 2 3 and so one, its counting by 1s. You have to plot $\frac{5}{3}$ on the number line by you having to go after the 1 because the 1 is made by $\frac{3}{3}$ thirds. $\frac{5}{3}$ has to be a mixed number. The mixed number is $1\frac{2}{3}$ that is how to put $\frac{5}{3}$ on the number line.







• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.





• What fraction represents the location of point G? Use the number line to explain how you got your answer.

• Explain how to plot $\frac{5}{3}$ on a number line.

Enter your answer and your explanations in the space provided. You may use the drawing box to add a drawing to help explain your answer and support your explanations.

So as you can see, by $\frac{3}{6}$, the number line is counting by sixths. The G is on $\frac{2}{6}$ so the answer is two sixths. The three sixth fraction helps you figure it out by the fraction being right next to the G. Thats how you can remember that the answer is two sixths.

Drawing Box



Practice Set Paper	Score
P1-1	2
P1-2	4
P1-3	1
P1-4	0
P1-5	2
P1-6	3
P1-7	0
P1-8	4
P1-9	1
P1-10	2