Problem of The Week

Number Lines provide a great opportunity for students to demonstrate their understanding of numbers and to explore the relationship between numbers (whether it is whole numbers in primary; whole numbers, decimals and fractions in elementary; or whole numbers, decimals, fractions and integers in intermediate). The following prompts can be used to support classroom discourse and provide teachers with opportunities to formatively assess student understanding.

Be mindful that during these prompts, it is important the teacher listens to student conversations and asks questions that illicit student thinking.

Primary	1. Ask students to draw an open number line. 2. Ask students to record 0 on the far left of the number line (or bottom if the number line is vertical). 3. Ask students to place the number 18 on the number line. 4. Ask why the student placed 18 where they did on the number line. ***or*** Provide students time to compare where they placed 18 on the number line. Have students placed 18 in similar or different locations on the number line? Why or why not? 5. Ask students to place the number 30 on the far right of the number line (or top if the number line is vertical). 6. Ask students if they need to adjust where they originally placed 18 on their number line. Why or why not?

** I want to highlight that I was cognizant not to direct students to draw their number line vertically or horizontally. It will be important for teachers to examine the type students draw as this may indicate the type of number line we use most often in class. **

Elementary	1. Ask students to draw an open number line. 2. Ask students to record 0 on the far left of the number line (or bottom if the number line is vertical). 3. Ask students to place the number 37.85 on the number line. 4. Ask why the student placed 37.85 where they did on the number line. ***or*** Provide students time to compare where they placed 37.85 on the number line. Have students placed 37.85 in similar or different locations on the number line? Why or why not? 5. Ask students to place the number 50 on the far right of the number line (or top if the number line is vertical). 6. Ask students if they need to adjust where they originally placed 37.85 on their number line. Why or why not?	1. Ask students to draw an open number line. 2. Ask students to record 0 on the far left of the number line (or bottom if the number line is vertical). 3. Ask students to place the number $\frac{3}{2}$ on the number line. 4. Ask why the student placed $\frac{3}{2}$ where they did on the number line. ***or*** Provide students time to compare where they placed $\frac{3}{2}$ on the number line. Have students placed $\frac{3}{2}$ in similar or different locations on the number line? Why or why not? 5. Ask students to place the number 10 on the far right of the number line (or top if the number line is vertical). 6. Ask students if they need to adjust where they originally placed $\frac{3}{2}$ on their number line. Why or why not?

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Intermediate	1. Ask students to draw an open number line. *2.* Ask students to record –18 on the far left of the number line (or bottom if the number line is vertical). *3.* Ask students to place the number 0 on the number line. *4.* Ask why the student placed 0 where they did on the number line. *or* Provide students time to compare where they placed 0 on the number line. Have students placed 0 in similar or different locations on the number line? Why or why not? 5. Ask students to place the number 5 on the far right of the number line (or top if the number line is vertical). 6. Ask students if they need to adjust where they originally placed 0 on their number line. Why or why not?	1. Ask students to draw an open number line. 2. Ask students to record –3 on the far left of the number line (or bottom if the number line is vertical). 3. Ask students to place the number $\frac{13}{4}$ on the number line. 4. Ask why the student placed $\frac{13}{4}$ where they did on the number line. *or* Provide students time to compare where they placed $\frac{13}{4}$ on the number line. Have students placed $\frac{13}{4}$ in similar or different locations on the number line? Why or why not? 5. Ask students to place the number 5.15 on the far right of the number line (or top if the number line is vertical). 6. Ask students if they need to adjust where they originally placed $\frac{13}{4}$ on their number line. Why or why not?

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