Number and Place Value Prior Assessment Question 1:

Q1 : I can place numbers including negative numbers on to a number line.

NPV 3 : use negative numbers in context, and calculate intervals across zero

Teacher Input Ideas:

- Provide the children with a number line on the board. Place intervals on there for the children. On the tables, place cards with different numbers on. This can be differentiated dependent on the needs of the class. Ensure you include positive and negative numbers. You may also want to include positive and negative decimal amounts, give the children time on the tables to prove where the correct position on the number line is. Encourage discussions about the correct positions and the use of key knowledge, such as: .5 would be half way, .25 would be ¼ of the way between the 2 intervals, .3 would be here etc. Ask the children to also explain the difference of the position of – 3. 7 and positive 3.7. What do they notice? How does the scale work?

- Create a large whole class number line out of string on the floor/playground. Children to create own scale of positive and negative numbers. Allow enough space to zoom in between whole numbers in both positive and negative integers.

Practice Activities

Purple Practice: Most suited for children who made errors in Question 1 and show little understanding of negative numbers.

The children to be given the task sheet with number lines on. The children to place the positive and negative amounts into the correct place. Once the children can do this, encourage the children to think about 0.5 intervals in negative and positive integers.

Green Practice: Most suited for children that made errors in Question 1 and will benefit from further exploring negative integers that include decimals.

The children to be given the task sheet with number lines for positive and negative integers. The children to mark decimals such as 0.25, 0.5 and 0.75 and show understanding when positioning amounts on the positive and the negative scales. If the children need challenging further, encourage the children to zoom in to one part of the number line and think about where .1 and . 3 etc would be . encourage -.1 and -.3.

<u>Yellow Practice</u> Most suited for children who demonstrate understanding in Question 1 and will benefit from further exploring negative decimal amounts up to 2 decimal places.

For the yellow activity the children are provided with blank number lines. Encourage the children to think about which amounts they can place at the intervals(including negative amounts). Then ask the children to zoom into part of the number line and create another number line on this section. Such as – 4 and -3 . Encourage the children to think carefully about the positions and which way these need to be written. Then think about zooming into this again to look at 2 decimal place numbers such as -3.9 to -3.8.

<u>Mastery</u> – problem solving

The children are presented with a problem where they are to work out the last number on a number line. Present the children with the statements about the number line. Ask the children how they are going to solve this problem. What skills will they use? Discuss ideas and allow children time to solve this. You may need to pause during this time to reflect on the word interval and check there are no misconceptions with the meaning of this. An interval is all the numbers between two numbers. So therefore encourage the children to find 12 numbers in between -6.75 and ? in order to work out what the missing number will be.
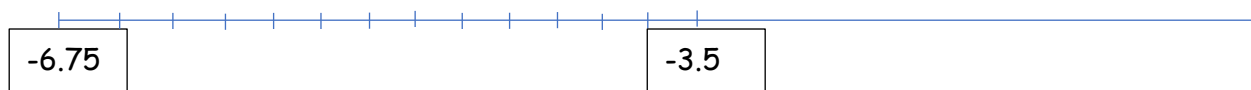
<u>Answers:</u>

Purple:

a) -6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4
b) -13, -12, -11, -10, -9, -8, -7, -6, -5, -4, -3
c) -25, -24,-23,-22,-21,-20 ,-19,-18,-17, -16,-15
d) -1, -0.5, 0, 0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4
e) -2.5, -2, -1.5, -1, -0.5, 0, 0.5, 1, 1.5, 2, 2.5
f) -10.5, -10, -9.5, -9, -8.5, -8, -7.5, -7, -6.5, -6, -5.5

Green:

a) -3.5, -3, -2.5, -2, -1.5, -0.5, 0, 0.5, 1, 1.5
b) -7, -6.5, -6, -5.5, -5, -4.5, -4, -3.5, -3, -2.5, -2
c) -1.25, -1, -0.75, -0.5, -0.25, 0, 0.25, 0.5, 0.75, 1, 1.25
d) -7.5, -7.25, -7, -6.75, -6.5, -6.25, -6, -5.75, -5.5, -5.25, -5
e) -0.8, -0.6, -0.5, -0.4, -0.3, -0.2, -0.1, 0, 0.1, 0.2

Mastery:

-6.75

-3.5

Some children may have different views about the 12 intervals. Some children may suggest including the 12th interval and this will be the answer. Some children may suggest the number after the 12th interval. Talk about this as a class/group and why some children may have different answers.
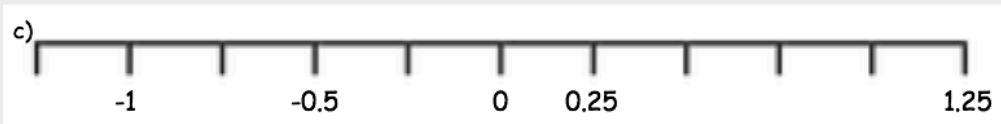
BRICKWORK
Mathematics

Fill in the missing parts of the number lines.

a)

          0   2

b)

                              -7   -3

c)

                                              -15

d)

-1   1   3

e)

-2.5   -1.5   0   0.5   2

f)

     -10   - 8   - 6.5

BRICKWORK
Mathematics

Fill in the missing parts of the number lines.

a)

-3.5   -1   0   1.5

b)

-5   -3.5   -2

c)

-1   -0.5   0   0.25   1.25

d)

-7   -6   -5

e)

-0.5   0   0.2

f)
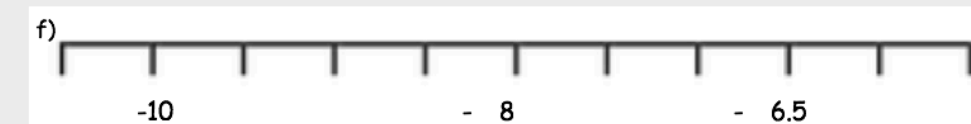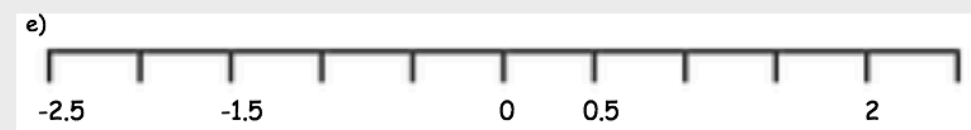
BRICKWORK
Mathematics

Jagroop draws a number line. He starts his number line at -6.75. Each interval is marked every 0.25. He has 12 intervals.

What is the last number on his number line?

Tips :

- How will you work this out?
- Where will you start?
- Will you need any resources or equipment?