Blast activity A8: *Distance between integers*

Preparation:
Complete Journal problem 3 before beginning this activity
It would be useful to revise using number lines with positive integers only. You will need basic coloured pencils or pens.

Teaching Tips:
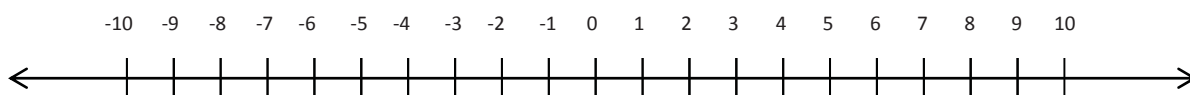**Initial thinking questions:**
1. If I have a bank account and I spend money, am I adding to or subtracting money from the initial balance? How do you know?
2. My bank account is positive.   Am I adding to or subtracting money from the initial balance when I spend money?
3. My bank account is positive.   Am I adding to or subtracting money from the initial balance when I deposit money?
4. My bank account is negative.   Am I adding to or subtracting money from the initial balance when I spend money?
5. My bank account is negative.   Am I adding to or subtracting money from the initial balance when I deposit money?
6. Does my bank balance being negative or positive change whether spending money is adding or subtracting? Explain your answer:
7. Does my bank balance being negative or positive change whether depositing money is adding or subtracting? Explain your answer:

•   Discuss the 'Initial thinking questions' above as a group. It is very important to keep a close eye on these discussions, so it might be useful to have only one group working through them at a time under close teacher supervision. You need to watch who is coming up with the ideas, and redirect as necessary.
•   Once students have the idea, allow them to work in pairs or small groups to complete the questions. You may need to remind them how to use number lines for adding and subtracting.
•   Discuss answers as a group so that a common consensus forms. Focus on finding the patterns and creating a common understanding of positive and negative integers.

Follow up and application:
This activity is an application question.

A8.   Distance between integers

> 🗒   In this activity you will work out the distance between positive and negative numbers so that you can use this later for operations with them.

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-10  -9  -8  -7  -6  -5  -4  -3  -2  -1   0   1   2   3   4   5   6   7   8   9   10
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Questions:

1. Put a green dot on -2 and a blue dot on 0. How far is it between these two points?
   Explain how you worked it out:

2. Put a red dot on 5. How far is it between 0 and 5? Explain how you worked it out:

3. So how far is it between -2 and 5? Explain how you worked it out:

4. How far is it between -5 and 2? Explain how you worked it out:

5. How far is it between -5 and -2? Explain how you worked it out:

> **BACKWARDS QUESTION:**
> Name two numbers that are 5 away from -4. Explain how you worked it out: