Hit the spot

Teacher notes

Why use this resource?

Using this resource, students will have to convert between different representations of vectors and they will practise adding vectors in two dimensions. The task should help to reinforce the idea that a vector is unchanged by translating it in the plane and expose any confusion between vectors and positions.

Possible approaches

Students can either work on paper, sketching and writing their solutions, or they can use the interactive diagram. Note, however, that the interactive version bypasses the need to understand different written representations.

You might find it helpful to use the interactive when collecting class responses as part of a plenary activity. It can help to clarify that we really have found all possible combinations and also illustrate features such as commutativity, $\mathbf{a}+\mathbf{b}=\mathbf{b}+\mathbf{a}$.

Key questions

- Can you write that vector in a different way that would be easier to work with?
- What if we put those two the other way round? What would that look like?
- Is that the only way of getting to T?
- How do you know you've found all the possible combinations?

Possible extension

The solution contains some questions about combinations of *multiples* of two starting vectors. Students could be encouraged to explore this further with a view to discovering that a linear combination of any two non-parallel vectors can get you to any point in the plane.