DARLINGTON COLLEGE OF TECHNOLOGY

The 100 Metres Dash
Probability Investigation – Teacher's Notes

Objectives
- *to add single digit numbers*
- *to record information in a table*
- *express the likelihood of an event using fractions*
- *find the range and total number of possible outcomes of combined events*

Main curriculum elements covered
Whole Numbers
- N1/E1.4 E2.3 Add / recall single digit numbers with totals to 10
- N1/E3.3 Recall addition facts to 20
Data and statistical measures
- HD1/E1.3 Construct simple representations or diagrams
- HD1/E2.4 Collect simple numerical information
- HD1/E2.5 Represent information so that it makes sense to others (e.g. in lists, tables and diagrams)
- HD1/E3.4 Organise and represent information in different ways so that it makes sense to others
Probability
- HD2/L1.2 Express the likelihood of an event using fractions, decimals and percentages with the probability scale of 0 to 1.
- HD2/L2.1 Identify the range of possible outcomes of combined events and record the information using diagrams or tables

Di Mellor (details below), the contributor, says:

'Entry learners will complete the practical part of the activity, throwing the dice and adding the scores. They could also draw a graph of their results and comment on it. It therefore would fulfil N1 and HD1 criteria.

Level 1 and Level 2 learners can discuss any patterns emerging, make predictions, draw the table of results and calculate probability. This then fulfils HD2/L1.2 and HD2/L2.1.

I deliberately made it a 100m race not a horse race because I have learners who do not gamble, whether for cultural or religious reasons. I made an OHT of the "race card" and we did it as a group the first time through and talked about it. Of course, someone noticed that athlete number 1 had no chance of winning. I like group teaching where basically everyone does the same thing at different levels.

As usual E1 & E2 learners did not go as far as L1 & L2 learners, but E3 learners did and enjoyed it. I like to introduce people to new things before they need to do them. So we all have fun, really!'

This resource was kindly contributed by Di Mellor, basic skills tutor at Darlington College. DMellor@darlington.ac.uk
Main curriculum links: HD2/L1.2 HD2/L2.1. Further details on page 1.
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The 100 Metres Dash

Lane	10m	20m	30m	40m	50m	60m	70m	80m	90m	100m
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

Lane	10m	20m	30m	40m	50m	60m	70m	80m	90m	100m
1										
2										
3										
4										
5										
6										
7										
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Game Instructions (use the '100 Metres Dash' table on page 2)

1. Which athlete do you think will win?

2. Throw 2 dice and add the scores together. Move the athlete with that number one place / 10 metres.

3. Keep throwing 2 dice together and moving the athletes until one athlete gets to the finish line.

4. Which athlete won? Who came last?

5. Repeat the race. Which athlete do you think will come first, second etc. this time?

6. Fill in the table below, writing in the totals when you throw 2 dice.

+	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

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Use your completed table on page 3 to help answer these questions

- How many ways can you score 1?

- How many ways can you score 2?

- How many ways can you score 3?

- How many ways can you score 4?

- How many ways can you score 5?

- How many ways can you score 6?

- How many ways can you score 7?

- How many ways can you score 8?

- How many ways can you score 9?

- How many ways can you score 10?

- How many ways can you score 11?

- How many ways can you score 12?

- How many possible ways are there of getting
  a score altogether (possible outcomes)?

- If probability is written as the number of ways an
  event can happen divided by the total number of
  possible outcomes, and written like a fraction,
  calculate the probabilities of each athlete from 1 – 12
  winning in your race, and write them as fractions.