



## How the mystery works

There are many ways of differentiating the activity and tweaking it to suit the needs of pupils, these notes outline some possible strategies:

- The cards (see below) should be copied, cut up and given to groups of pupils. Pupils should then be asked to answer the big question (see title) using the information on the cards.
- Pupils sort the cards into two piles – the cards that are useful and not useful in concisely answering the big question.
- Pupils prepare a brief written or oral response to the big question using the cards as evidence.
- Feedback response to class or teacher.
- The teacher could then introduce sub-questions to explore issues further, these questions are listed below and the questions used will depend on the ability of pupils, and the aims and scope of the lesson. Pupils could produce written or oral responses to these questions, perhaps a paragraph or statement for each question. Pupils could be asked to give responses to specific questions or perhaps produce a news style article.



## *Why does the rock move?*

A mystery about the sliding rocks of Racetrack Playa

1

The Racetrack is a flat dry lake bed located within the Racetrack Basin. A dry lake bed in a desert is called a playa.

2

Racetrack Basin is found within Death Valley National Park, California, USA.

3

Death Valley is one of the hottest places on earth. Temperatures in the summer can reach over 120F.

4

There are numerous stones of various shapes and sizes scattered across the surface of the lake bed.

5

Many of the stones on the surface of the lake bed have trails stretching out behind them. Most trails are orientated south to north.

6

A four wheel drive vehicle is recommended to drive the 27 mile long track to the Racetrack.

7

The trails are gouged out of the mud of the lake bed. They can be up to 2cm deep and up to 30 cm wide.

8

The presence of the trails suggests that the rocks appear to be moving northwards.



9

No living person has ever seen the rocks move, despite many years of study.

10

Racetrack stones only move once every two or three years and most tracks last for just three or four years.

11

Each of the stones has been given a girl's name for the purposes of research.

12

The rocks begin their journey by falling from cliffs on the south side of the lake bed.

13

The rocks are moving uphill since the north of the playa is a few centimetres higher than the south.

16

Most of the stones are made of dolomite, a type of sedimentary rock which does not contain any iron.

15

Visitors leave footprints in the mud during rainy spells, however it is forbidden to walk on the playa when the surface is wet.



17

The length of the trails varies from a few metres to over 800 metres.

18

The prevailing wind is from south to north. Winds are channelled through a gap in the mountains before they reach the Racetrack.

19

During periods of heavy rain, water washes down from nearby mountain slopes onto the playa, forming a shallow, short-lived lake.

20

The winters are mild with occasional winter storms.

21

The phenomenon is unknown outside Death Valley.

22

It has been suggested that the trails are the result of teenage pranksters.

23

Some scientists have suggested the trails are caused when the stones become embedded in moving ice sheets.

24

Some of the trails are straight, some zigzag and even double back on themselves. Neighbouring stones can have trails that can be parallel or diverge away from each other.



25

Scientists calculate that it would require a wind speed of several hundred mph to move the heavier rocks across wet mud. Such speeds are impossible.

26

The surface of the lake bed becomes very slippery after rain.

27

Scientists cannot agree on the causes of the sliding rocks phenomenon.

28

It can get cold enough at night to freeze resulting in sheets of ice forming on the lake bed.