

Researcher's name: \_\_\_\_\_

**1. What is our research question?**

What camera setting can you best use to capture the route of colliding marbles?

**2. How does this research fit the theme of the project?**

It matches Cern's Large Hadron Collider. It contains detectors that record the particles as they have collided.

**3. What do we think will be the answer to the research question? And why do we think this will be the answer?**

[Researchers call this a 'hypothesis']

**4. Which persons or what materials are we researching?**

We conduct research to the effect of camera settings.

**5. What is it that we will measure exactly?**

[Measuring can mean: measuring length, distance or weight.

Measuring can also mean: asking people in your research the same question and comparing the answers.]

We'll investigate what camera settings are best to capture the route of colliding marbles. Example of a camera setting: shutter speed, focus modes.

**6. In what way will we do the measuring?**

[For example with a test, with a question or with interviews]

We're going to do a test. We let a marble roll down a hollow tube (angle of 45° degrees) and crash into a wall. With the camera we will record the route the marble takes after the collision.

**7. How many times or with how many people do we need to repeat our measuring to really know the answer to the question?**

We are going to investigate each camera setting that we want to investigate five times.

**8. How will we record the results while we conduct our research?**

[For example: make a table, keep a tally or write down the answers.]

We will compare the different photos and we will write down which camera setting is the best in capturing the route of a marble.

**9. What should stay the same in our research and what should change?**

The same: marble, hollow tube, placing (angle of 45° degrees), surface on which the marble moves (smooth), distance to the wall.

Different: camera settings

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**10. Make a plan: when will you do the different research activities.**

Activiteit:	Plaats/locatie:	Dag:	Tijd:

**11. What help and which materials do we need?**

- Marble
- Hollow tube
- Camera
- Slippery floor
- Wall

**12. From whom do we need permission, apart from the teacher?**

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**13. Who will do what in preparation and conducting our research?**

Naam:	Taken:	Wanneer af: