Some strategies:

- Experiments that can be done at home with household equipment and measuring instruments, e.g. mass: kitchen and bathroom scales, time: watches, mobile phones, length: tape measure, ruler, temperature: room and meat thermometers. Simple motion experiments can be analysed with Tracker. Mobile phone apps are increasingly versatile.

- Record yourself on video doing the experiment with students extracting data from instruments displayed in the video or from measurements that you read out as they are being taken. The students then complete their report on the experiment.

- Use dummy data (individualised) or from student reports from previous years for the students to analyse.

- Experimental planning: Students describe their experimental design, what data they would collect the measuring instruments they would use and provide a sample analysis of the data.

- Computer simulations.

Sources of experiments students can do at home


- **Physics Girl - Experiments you can try!** - 5-minute videos with experiments students can try at home.

- **Physics tricks** - Experiments students can try at home, with materials list, instructions, and short accompanying video.

Science using Mobile phones

- [https://sciencejournal.withgoogle.com/](https://sciencejournal.withgoogle.com/) The Google Science Journal is a free app. It has a Teacher’s section. There are a good number of experiments across Science with a couple on Newton’s laws that use the accelerometer in the phone. The other physics related ones use the microphone and camera, but they are mainly qualitative.

- [https://www.researchgate.net/post/Are_smartphones_key_to_a_MOOC_in_experimental_physics](https://www.researchgate.net/post/Are_smartphones_key_to_a_MOOC_in_experimental_physics) Are smart phones a key to a MOOC in experimental physics? An article.

- [https://www.youtube.com/watch?v=jiwU9q21RDdw](https://www.youtube.com/watch?v=jiwU9q21RDdw) A Youtube video of a pendulum experiment using a mobile phone as the mass on the end of the string.