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BotSTEM – Erasms+ KA2 Project

2017-1-ES01-KA201-038204

Good practice template

1. Title of the activity / practice	**Squashed tomatoes**
2. Origin of the activity	This activity form part of the CREST AWARDS. The CREST Awards scheme is the British Science Association's flagship programme for young people, around 40'000 students in the UK gain CREST Awards every year. It is the only nationally recognised accreditation scheme for STEM project work (science, technology, engineering and mathematics) subjects, providing science enrichment activities to inspire and engage 5-to-19-year olds. CREST is delivered by educators (teachers, technicians, club leaders, home educators etc.)
3. Age of the students	7-8
4. Target group (type of the learners, size of the group)	General curriculum Small group of 3-4
5. School subjects + topics concerned	Cross curricular, Design and technology, Engineering, Science, Physics, maths
6. Educational goals of the practice	This activity is designed to get children thinking about how gravity works and, in particular, how it can be used to transport food.
7. Duration	60 min
8. Place	Classroom / lab / outdoors / at home, etc.

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9. Short description of the activity	Introduce the challenge by discussing the various ways in which food is transported from where it is produced to the local market or shop. The problem: Many farmers in Nepal grow their crops (including tomatoes) on the mountainside. To sell them at the local market they need to transport them to the bottom of the mountain, BUT it's a long and hazardous journey and they need to cross a river. Tomatoes are quite easily squashed so need to be transported with care The challenge: the students work in small groups to design and build a model that can transport as many cherry tomatoes at the same time without squashing them. The tomatoes need to be transported a minimum of one metre along the ground starting from desk height. However, the challenge is more spectacular, and you are more likely to get squashed tomatoes if you set a height of more than two metres, and a horizontal distance of 1.5 - 2 metres. The tomatoes cannot be touched whilst they are moving, catapulted or 'flown' in any way. They must be moved in a controlled way so they don't just crash into the ground and get squashed. Use the record sheet to calculate the best or average weight of tomatoes each group transported. From this deduce the class average. Maybe extend into a competition between classes within a year group. Use the information to discuss averages, produce graphs etc. If you reset the parameters of the challenge, so that students aim to transport the maximum weight of tomatoes with in a set time limit (e.g. 5 minutes) how would this affect the results? Can students work out how much they could move in 1, 5 or 10 hours (not forgetting the time needed to refill the containers and transport them back up the mountain)?
10. Evaluation	Questions, Rubric for group work, peer evaluation, teacher's observation
11. Materials / Resources / technical requirements	Things to make a framework or basket from (e.g. K'Nex, Lego, Meccano, margarine tubs); A means to attach their basket/framework to the mode of transport and pulleys,ramps or similar to allow everything to moveWays to stick everything together (e.g.string, tape) String

12. Tips for educators / theoretical background (if applicable) or curriculum context	URL: https://www.stem.org.uk/rxuh3 This ptactice was first published by Practical Action Stem challenges https://practicalaction.org/stem