Problem Posing Pro-Forma

Assumption
A numerical or maths problem has multiple solutions or none, it is framed as an open ended question. There is no clear path to the answer – students cannot easily use a formula. Within the problem students are often given too much information or not enough

Activity Name — **Egg Roulette**

https://www.youtube.com/watch?v=OYRyTQSRc74&feature=youtu.be

Expected duration of activity — **60-90 minutes.**

What EQF level is the activity (approximately)? — **1-3**

What is the topic? — **Shape, Percentages, Prices (cross over with food technology - nutrition etc)**

What are the Learning Outcomes?

ALL pupils will understand the 'game' and the numeracy involved.

MOST pupils will be able to discuss mathematically the likelihood of the egg being raw or cooked.

SOME pupils will be able to calculate probabilities and draw a tree (or other) diagram.

SOME pupils will be able to discuss possible extensions to the problem.

Prerequisite/prior knowledge assumed?

WARM — Number skills (bonds to 12, subtraction) and likelihood of events.

HOT — Probability and fractions.

SCORCHING — Conditional probability, combinations of outcomes and tree diagrams

In what ways does the problem, or the way the problem is delivered to the students:

• encourage critical way of investigating and thinking? **Yes**

• encourage analysis? **Yes**

• allow students to be creative? **Yes**

• allow independent learning? **Yes**

• allow for co-operative learning? **Yes**

• allow students time to think? **Yes**

• have a relevant or interesting context? **Yes**

Resources or materials required?

Pupils will require: pen, paper, calculators, cubes or counters to act it out?

Teacher will require: screen, computer & lesson prompts

What technology is required in the delivery of the problem?

Screen, computer & speakers

What technology might potentially be required in the solving of the problem?

NA

Suggestions for delivery

PROMPTS/QUESTIONS –

What is a boiled egg?

Describe what the video shows?

Discuss the mathematics you see in the video?

What questions could be asked?

Can you calculate the probability of the first egg being;

    a) Raw?

    b) Cooked?

What would you change about the 'game' to make it easier or harder to find a cooked egg?

Would you participate in the game? Justify.

SOLUTION

Possible solutions to follow, however this problem is designed to promote mathematical thinking and discussion.