Problem Posing Pro-Forma use of photographs

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

1. Activity Name: Area of a Circle

2. Expected duration of activity: 30 minutes

3. What EQF level is the activity (approximately)? Levels 3 and 4

4. What is the topic? Area

5. What are the Learning Outcomes? Finding the area of a circle and making sense of where the formula comes from

6. Prerequisite/prior knowledge assumed? Area of a square / rectangle/ triangle. Pi

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

   - encourage critical way of investigating and thinking? When finding the area of a circle, students are often given the formula and required to substitute in the required information. This problem encourages students to think alternatively and investigate the origins of the formula.

   - encourage analysis?

   - allow students to be creative? Students can re-arrange the triangle cheese slices into a shape which they have already learned how to find the area of.

   - allow independent learning? can work individually

   - allow for co-operative learning? Can work in small groups

   - allow students time to think? Picture is static so can be returned to at any time.

   - have a relevant or interesting context? Cheese triangles

- allow for multiple ways of solving or investigating the challenge? Variety of ways to solve. One possible solution is given in another photo provided

8. Resources or materials required? Photograph. cheese triangles would be useful so the students could recreate the problem

9. What technology is required in the delivery of the problem? None

10. What technology might potentially be required in the solving of the problem? https://www.geogebra.org/m/fyqAUV22 This Geogebra app is very useful to visualise what is happening

11. Suggestions for delivery: teacher presents the problem and students work individually or in small groups to solve.