Area of Polygons

By CL Tam

RATIONALE OF THE DESIGN

NCS students' needs/characteristics:

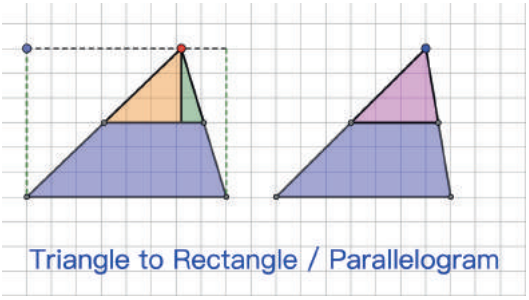
- NCS students in general are weak in arithmetic operations (meaning that they may have difficulty in computing complex expressions correctly). But they are ready to participate in exploratory activities. According to teachers' experience, NCS students have difficulties (which may be related to language barrier) in memorising the formulae of different kinds of polygons. Identifying the height of triangles, parallelograms and trapeziums may also be challenges facing NCS students. Also, some students may mix up the concepts of perimeter and area.
- Considering the diversity of students' prior knowledge, it is suggested that all examples used in teaching should be adjusted so that
  - Computation complexity will be reduced.
  - Students may discover the formulae themselves so that their memory for the formulae will be more natural and may last longer.

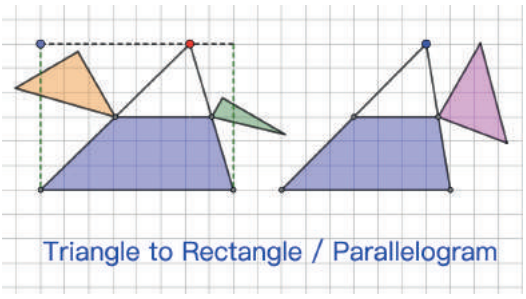
LEARNING TARGETS

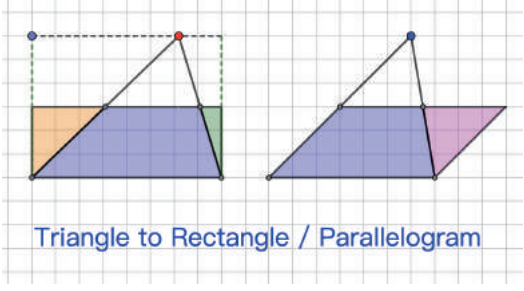
- Recall or relearn the formulae of different polygons
- Find the area of polygons by various methods

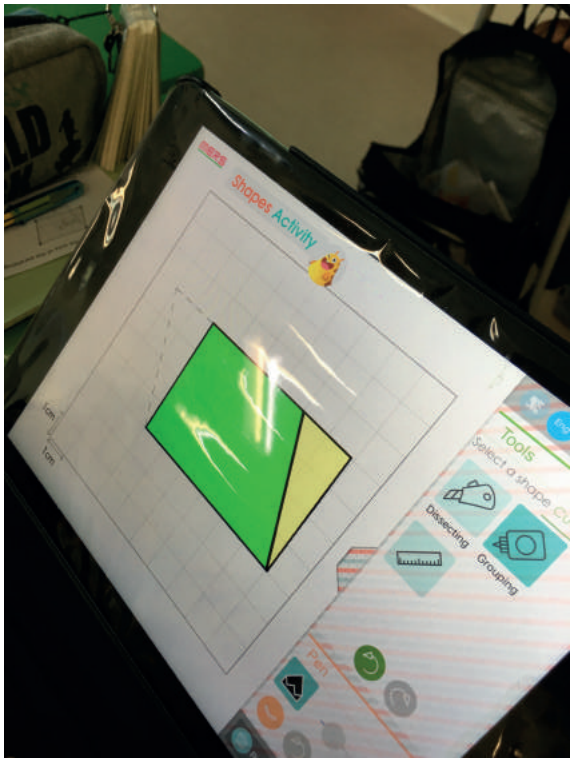
LEARNING AND TEACHING STRATEGIES

- Recall or relearn the formulae of different polygons via hands-on activities and/or IT.
  - Discover the formulae via different means
    - GeoGebra Apps
      https://www.geogebra.org/classic/tw5fbmf9









- Apps provided by the textbook publisher
- Make polygons with standard polygons and find the area through measurement and calculation.
- Try to rename the methods with easier and self-explanatory names:
  - Cutting method and Removal method: the names help students memorise the operations needed
- Use more interesting figures and allow students to design their own figures before finding the area
  - Increase students' engagement
  - The quality and quantity of students' practice is enhanced