Math 4 - Act. 09: Red Walls and Green Doors

Summary
Students will use pattern blocks to construct growing-pattern designs and to make predictions.

Materials
    Red trapezoid pattern blocks
    Green triangle pattern blocks
    Paper

Background for Teachers
Students should have experiences examining and extending patterns. This could include skip counting books and a daily number line.

Intended Learning Outcomes
3. Reason mathematically.

Instructional Procedures

Invitation to Learn
Ask the students to look at the pattern and give them this challenge: "How many pattern blocks in all do you think it would take to make a red wall with 50 green doors?" On the overhead projector, place two red trapezoids and one green triangle in the pattern shown below:

Instructional Procedures
    Put the students into groups of two. Give each pair 14 green triangles, 14 red trapezoids, and paper.
    Have the students duplicate the pattern that is on the overhead. Ask the students how many blocks it took to make the wall.
    Continue the pattern on the overhead, adding one more triangle and one more trapezoid. Say to the students: "Our pattern has two more doors. How many blocks does it take to make this wall?"
    Have the students record their growing patterns on paper by tracing around the pattern blocks. Then have them make a table to record their findings.
    After they have continued the pattern a couple of times, challenge the students to figure out how many pattern blocks would it take to make a red wall with 50 green doors. Discuss with the students their predictions.
    Have the students work in their pair groups to figure out the challenge question.
    As you observe the students working, allow them to discover "the right answer" for themselves.
    At the end of class, bring the students together to discuss their findings.

Curriculum Integration
Block patterns make wonderful art.

Extensions

Possible Extensions/Adaptations
Ask the students to use their pattern blocks to construct their own growing-pattern designs.

Assessment Plan
Have the students draw a growing pattern in their journals. Then have them construct a table and state the rule that describes the relationship involving the number of pattern blocks used to make the

pattern.

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