

# THE GREAT SHAPES CONTEST

## GENERAL CONCERNS

1. RELATE TO VAN HEILE LEVELS
2. EMPHASIZE MOVING FROM 2-D TO 3-D.
3. SPECIFY ADAPTING AND MODIFYING FOR OWN CLASSROOMS.
4. ALLOW TIME FOR KIDS TO EXPLORE, WORK THROUGH ACTIVITIES
5. ALLOW KIDS TO WRITE/EXPLAIN/TALK/WRITE ABOUT THEIR EXPERIENCES.

## THE GREAT SHAPES CONTEST

MATERIALS: 2-3 SHEETS OF FIGURES STUDENT  
SCISSORS FOR EACH STUDENT  
2-3 ROLLS OF TAPE PER GROUP  
PAPER FOR SKETCHING

### CONTEST

TIME: 15-20 MINUTES

DIRECTIONS: DIVIDE CLASS INTO 6-8 PER GROUP  
PROVIDE EACH TEAM WITH SCISSORS, TAPE, AND SHAPES SHEETS

TELL EACH GROUP THAT ON YOUR SIGNAL, THEY WILL ASSEMBLE AS MANY DIFFERENT THREE-DIMENSIONAL, POLYHEDRA AS THEY CAN USING THE SHAPES ON THE GREAT SHAPES SHEET. NO SURFACE OF THE POLYHEDRA MAY BE CURVED, AND ALL POLYHEDRA MUST BE ENCLOSED. YOU MAY WANT TO ALLOW A MINUTE OR TWO BEFORE BEGINNING FOR GROUPS TO ORGANIZE THEIR TASKS AMONG THE MEMBERS.

EXAMPLES: PYRAMIDS, RECTANGULAR SOLIDS, AND CUBES ARE BUT SOME OF THE MANY POSSIBLE SHAPES.

WHO WINS: THE WINNING TEAM IS THE ONE WITH THE GREATEST NUMBER OF DIFFERENT POLYHEDRA.

**CUT ALONG DARK LINES ONLY  
ITEMIZE THE FOUR DIFFERENT SHAPES  
ARRANGE GROUPS AND TASKS AT BEGINNING**

### CATEGORIZING SHAPES:

TIME 15-20 MINUTES

DEBRIEFING: DEBRIEF THE RESULTING POLYHEDRA WHICH THE VARIOUS GROUPS CONSTRUCTED. POINT OUT COMMON SOLIDS AS THOSE WHICH MOST GROUPS BUILT. ALSO POINT OUT INNOVATIVE, UNUSUAL POLYHEDRA WHICH GROUPS HAVE CONSTRUCTED SUCH AS THE 'CHURCH STEEPLE', TRUNCATED PYRAMIDS, AND THE LIKE. FOLLOWING THIS HAVE GROUPS CATEGORIZE THEIR SOLIDS. ONCE THEY FINISH, DEBRIEF BY ASKING VARIOUS GROUPS TO DEFINE THE CRITERIA THEY USED FOR THEIR CATEGORIES.

**2-D TO 3-D**

**STUDENTS CIRCULATE TO LOOK AT OTHER GROUP'S SHAPES**

### SKETCHING SOLIDS

TIME: 10-15 MINUTES

**DIRECTIONS:**

ASK EACH GROUP MEMBER TO SELECT THEIR 'FAVORITE POLYHEDRON'. EACH MEMBER OF THE GROUP SHOULD THEN SHOW THEIR SKETCH TO ANOTHER GROUP MEMBER FOR IDENTIFICATION. THEN ASK EACH GROUP MEMBER TO SKETCH A NEW POLYHEDRON WHICH WOULD FIT IN ONE OF THEIR CATEGORIES BUT WHICH THE GROUP DID NOT BUILD. DEBRIEF AFTER EACH OF THESE STAGES. SUGGEST THAT SKETCHING SOLIDS IS LIKELY TO BE DIFFICULT FOR STUDENTS, AND THEIR OWN SKETCHES WILL PROBABLY SHOW A WIDE RANGE OF STYLES AND PERSPECTIVE.

**3-D TO 2-D**

**COULD USE ISOMETRIC DOT PAPER TO DRAW FIGURES**

**MIGHT USE STIFFER PAPER FOR PRIMARY LEVELS**

**MIGHT USE PAPER WITHOUT GRID ON IT FOR PRIMARY LEVELS**

**NO TIME LIMIT WITH PRIMARY**

**CUT SHAPES FOR PRIMARY, OR CUT SHAPES DURING ONE CLASS**

**SAVE SHAPES**

