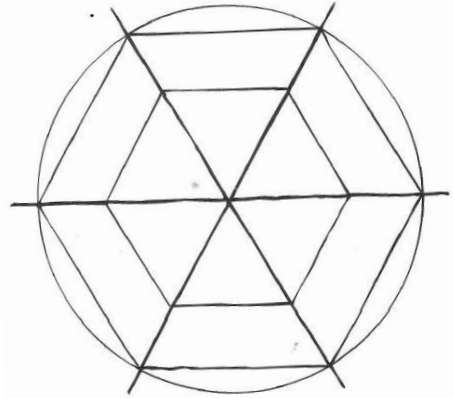


Seventh Grade Summer Math Activities

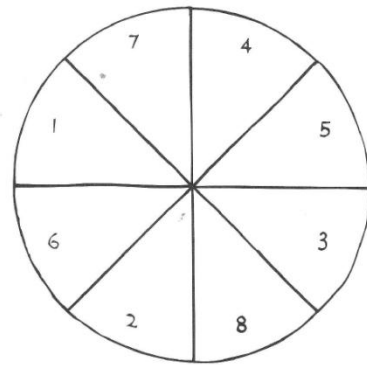
1) Clear Communication

Imagine you are talking to a friend on the telephone. How could you tell your friend how to draw the design at right? Write a list of clear directions. Test them on a family member? Was the person able to re-create the design? Write report listing your directions and how successful a family member was in re-creating the design.



2) Is this a fair game?

Is this game fair? If it is not fair, how can you change the rules to make it fair? **GAME RULES:** take turns spinning the spinner. One player always multiplies by the number 2; the other player always adds 4 to the number. The player with the greater result wins the point. Write a report and explain your thinking.



3) Secret Number

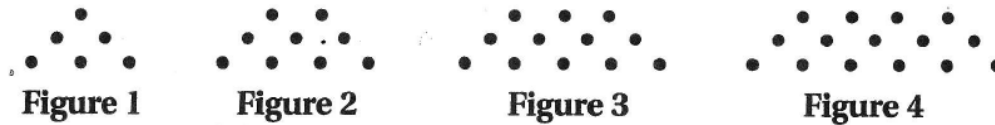
Jacob has a secret number. Read his clues and then answer the questions that follow. Jacob says, "Clue 1: My secret number is a factor of 60."

- Can you tell what Jacob's secret number is? Explain your reasoning.
 - Elijah says that Jacob's secret number must also be a factor of 120. Do you agree or disagree with Elijah? Explain your reasoning.
 - Michael says that Jacob's number must also be a factor of 15. Do you agree or disagree with Michael? Explain your reasoning.
 - What is the smallest number Jacob's number could be? Explain.
 - What is the largest number Jacob's number could be? Explain.
- Suppose for Jacob's second clue he says, "Clue 2: My number is prime."
- Can you guess his number and be certain? Explain your reasoning.
- Suppose for the third clue, Jacob says, "Clue 3: 15 is a multiple of my secret number."
- Now can you tell what her number is? Explain your reasoning.

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4) Pam's Pattern

Pam's teacher asked her to look at the pattern below and draw the figure that would come next.



- Pam does not know how to draw the figure. Draw the next figure for Pam.
- Write a description for Pam telling her how you knew which figure comes next. Make sure that Pam can understand how to continue the pattern herself.
- Write a rule that describes how to draw any figure in the pattern.

5) Table Tennis

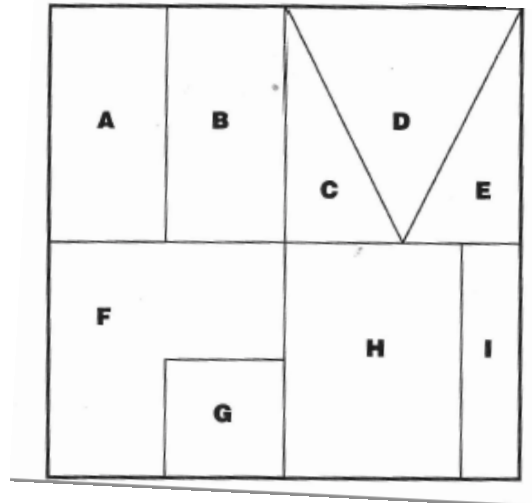
You have the job of organizing a round-robin table tennis competition for some students in your class. All the matches are singles – one against one. A round-robin competition means that every player has to play every other player once. You find out there are four tables available, in the large hall at the JCC. Individual table tennis matches normally take about half an hour.

- Imagine there are just three people in the competition. Each person has to play every other person once. How many matches will be played in the tournament?
- Ten people want to sign up to be in the competition. How many matches will be played altogether? EXPLAIN how you worked out your answer.
- Individual table tennis matches usually take half an hour. Remember there are four tables available. Determine the shortest amount of time for the competition. Show all your work.
- Suppose two additional students decide to join the tournament. How long will the tournament now take? Explain you worked out your answer.

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6) Fractions of a Square

The large outer square represents 1 whole unit. It has been partitioned into pieces. Each piece is identified with a letter.



- Decide what fraction each piece is in relation to the whole square, and write that fraction on the shape.
- Explain how you know the fractional name for each of the following pieces:

Piece A

Piece C

Piece D

Piece F

- Identify a piece or collection of pieces from the square that will give an amount close to:

$\frac{1}{5}$

$\frac{2}{3}$