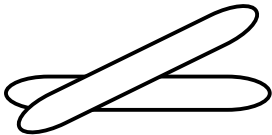
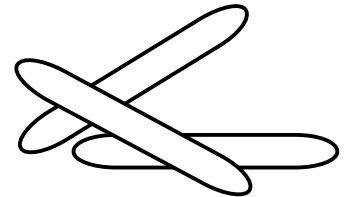




Aggammuuqtuq Math is a “*Hands-on at Home*” program containing activities that encourage parental involvement. Copy and laminate the instruction cards and include them in a zip-lock with any materials that the activities require. Assign students to take them home throughout the year. Aggammuuqtuq Math activities also work well as classroom centers and group work activities.



Stick Puzzles





Stick Puzzles

This collection of activities includes 15 stick puzzles suitable for students in grades 4—12. The puzzles are organized from simple to more difficult and all utilized simple sticks like toothpicks or popsicle sticks. These activities encourage many of the WNCP math processes including: visualization, reasoning, communication, and problem solving, as well as the IQ principles of Qanuqtuurniq (innovation), Tunnganarniq (inclusion), Pilimmaksarniq (hands-on learning), and Piliriqatigiinniq (collaboration).

Solutions are provided near the end of the card series. The solutions are for teacher reference only. Sharing solutions with students may limit their perseverance and ultimate enjoyment of the puzzles.

For more puzzles of this type check out the following web links:

- www.puzzles.com/puzzleplayground/Matches.htm
- www.ageofpuzzles.com/Puzzles/MatchstickPuzzles.htm



Stick Puzzle #1

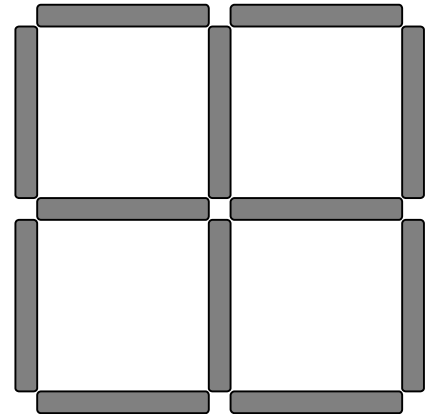
Set-up

Make the following shape from 12 sticks. Any sticks will do, popsicle sticks or toothpicks for example.

The Challenge

Remove any 4 sticks so that only two small squares remain.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #2

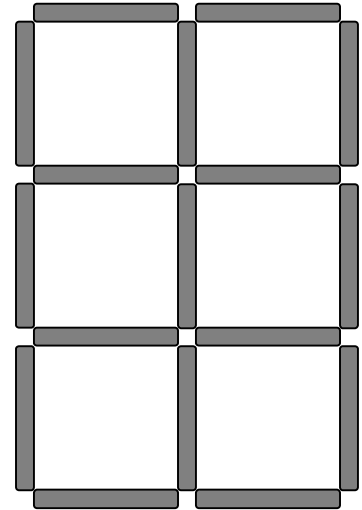
Set-up

Make the following shape from 17 sticks. Any sticks will do, popsicle sticks, toothpicks, or coffee stir sticks for example.

The Challenge

Remove 4 sticks so that only one large square and two small squares remain.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #3

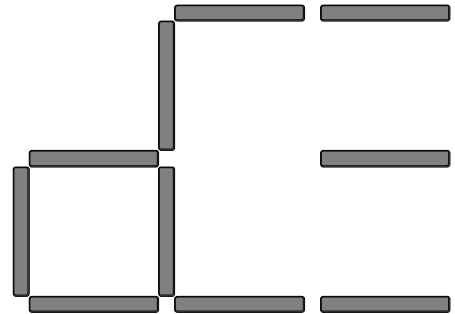
Set-up

Make the following shape from 10 sticks. Any sticks will do, popsicle sticks or tooth picks for example.

The Challenge

Move 3 sticks to leave only two squares.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #4

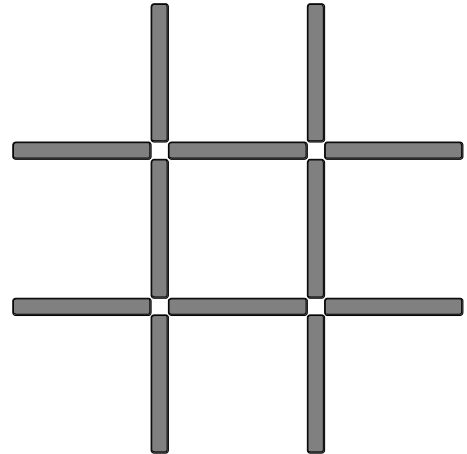
Set-up

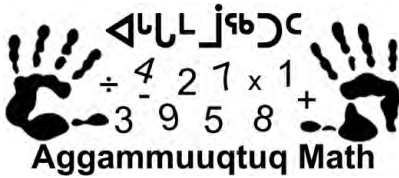
Make the following shape from 12 sticks. Any sticks will do, popsicle sticks or tooth picks for example.

The Challenge

Move 3 sticks to get three squares.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #5

Set-up

Make the following shape from 24 sticks. Any sticks will do, toothpicks for example.

The Challenge

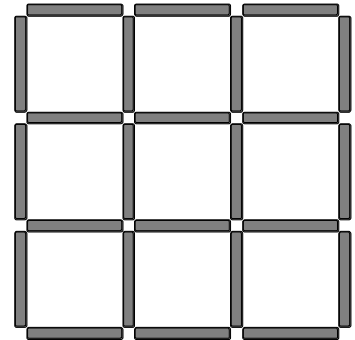
a) Remove 4 sticks so that only five small squares remain.

Set-up and Try Another

b) Remove 4 sticks so that only six small squares remain.

c) Remove 4 sticks so that only seven small squares remain.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #6

Set-up

Make the following shape from 12 sticks. Any sticks will do, popsicle sticks or tooth picks for example.

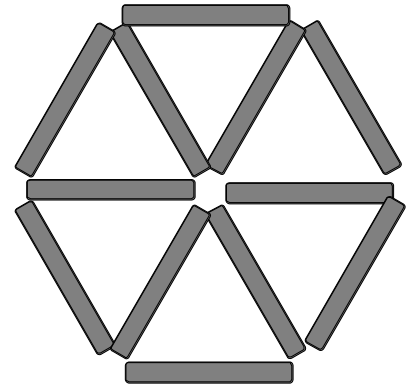
The Challenge

a) Remove 4 sticks to form three equilateral triangles

Set-up and Try Another

b) Move 4 sticks to form three equilateral triangles

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #7

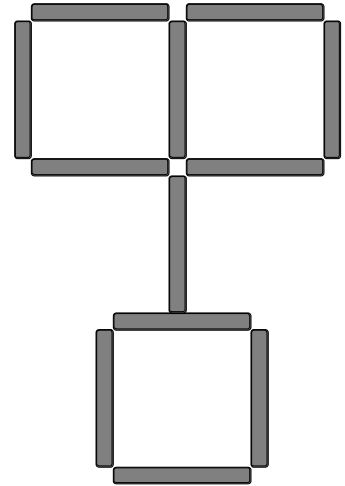
Set-up

Make the following shape from 12 sticks. Any sticks will do, popsicle sticks, toothpicks, or coffee stir sticks for example.

The Challenge

Move 4 sticks to get five squares.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #8

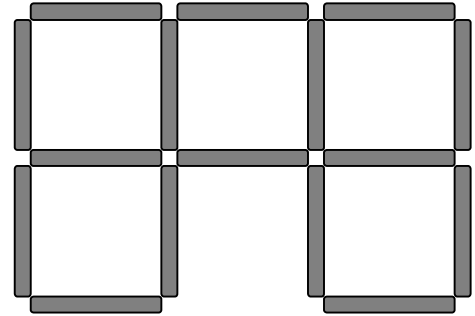
Set-up

Make the following shape from 16 sticks. Any sticks will do, popsicle sticks or tooth picks for example.

The Challenge

Move 3 sticks so that only four squares remain.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #9

Set-up

Make the following triangle shape from 18 sticks. Any sticks will do, popsicle sticks or tooth picks, for example.

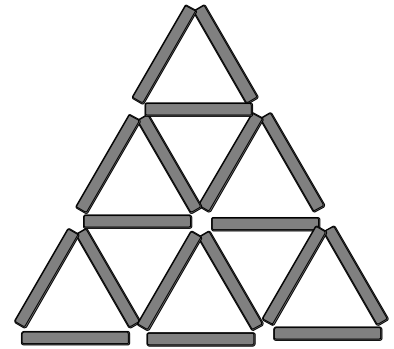
The Challenge

a) Remove 6 sticks so that only six small triangles remain.

Set-up and Try Another

b) Now remove three sticks so that only seven small triangles remain.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #10

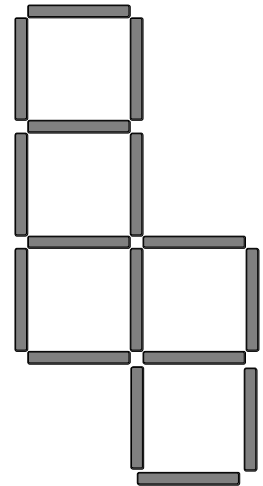
Set-up

Make the following shape from 16 sticks. Any sticks will do, popsicle sticks or tooth picks for example.

The Challenge

Move 2 sticks to create six squares.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #11

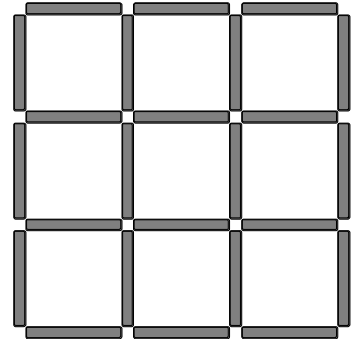
Set-up

Make the following shape from 24 sticks. Any sticks will do, popsicle sticks or toothpicks for example.

The Challenge

Remove 8 sticks so that only four small squares remain.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #12

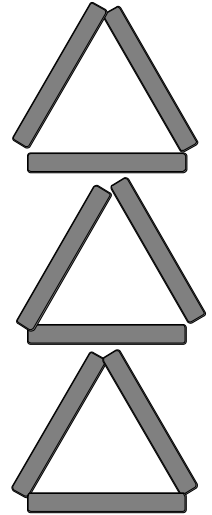
Set-up

Make the following shape from 9 sticks. Any sticks will do, popsicle sticks or tooth picks for example.

The Challenge

Move 3 sticks to form four equilateral triangles

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #13

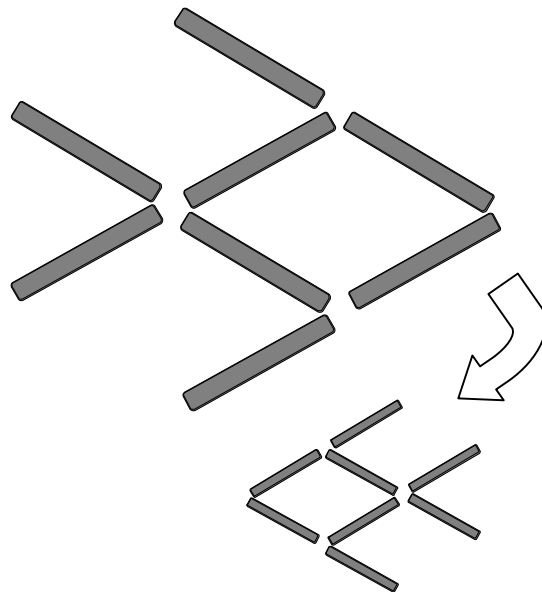
Set-up

Make the following fish shape from 8 sticks. Any sticks will do, popsicle sticks, toothpicks, or coffee stir sticks for example.

The Challenge

Move only 3 sticks to change the direction that the fish is swimming.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.





Stick Puzzle #14

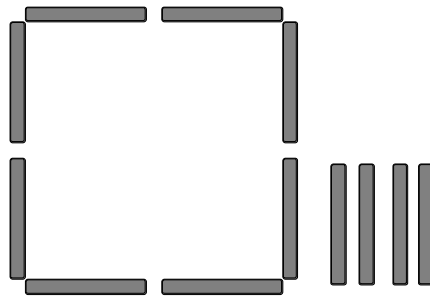
Set-up

Make the following shape from 12 sticks. Any sticks will do, popsicle sticks or tooth picks for example.

The Challenge

Use 4 sticks to divide the large square into two parts of the same shape.

- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.

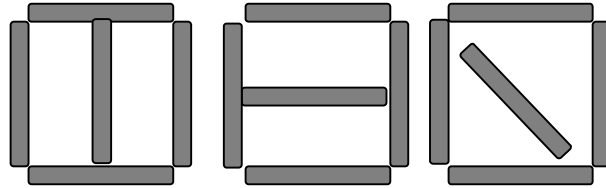




Stick Puzzle #15

Set-up

Make the following shape from 12 sticks. Any sticks will do, popsicle sticks or tooth picks for example.



The Challenge

Remove 6 sticks to leave ten. (Think outside the box—the answer is a pun!)

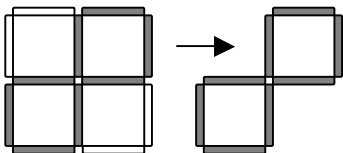
- Can you figure out how to do this? Show your parents.
- Ask your other family members to try as well.
- Show your teacher your solution when you go to school.



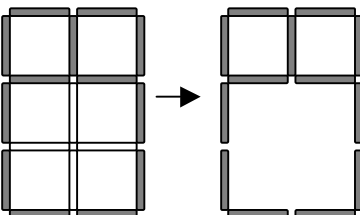
Stick Puzzle Solutions

In each of the following, the white sticks are the ones that are moved or removed to arrive at a solution. More solutions may be possible.

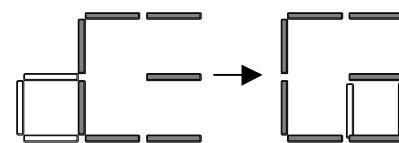
Stick Puzzle #1



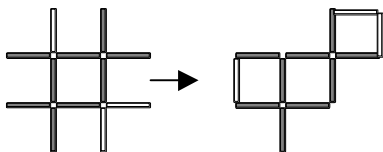
Stick Puzzle #2



Stick Puzzle #3

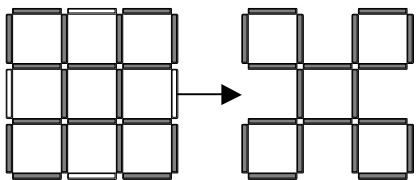


Stick Puzzle #4

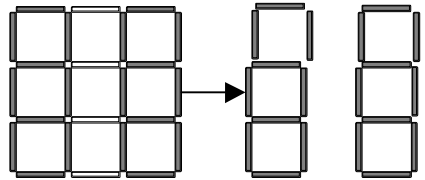




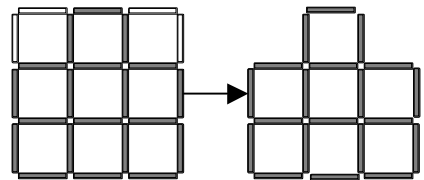
Stick Puzzle #5a



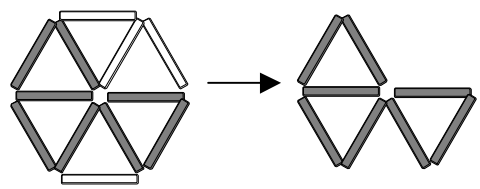
Stick Puzzle #5b



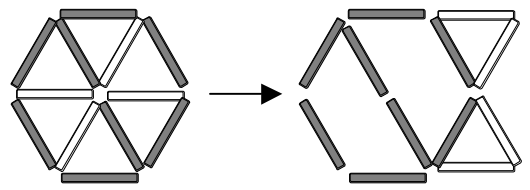
Stick Puzzle #5c



Stick Puzzle #6a



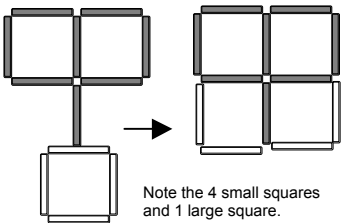
Stick Puzzle #6b



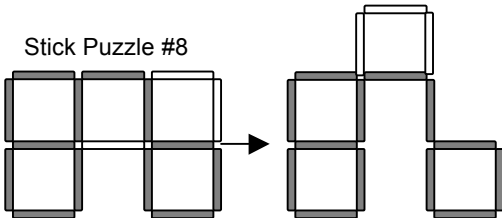
Note there are 2 small triangles and 1 large triangle. All are equilateral.



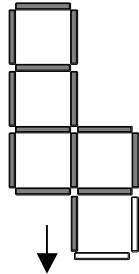
Stick Puzzle #7



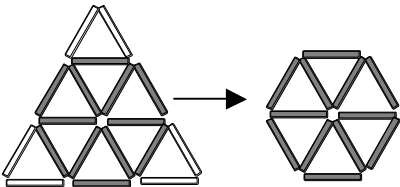
Stick Puzzle #8



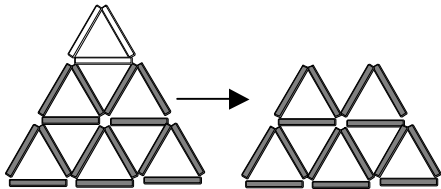
Stick Puzzle #10



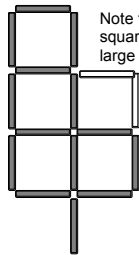
Stick Puzzle #9a



Stick Puzzle #9b

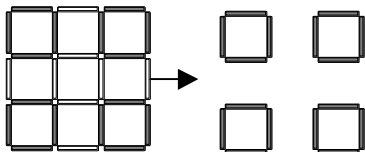


Note the 5 small squares and 1 large square.

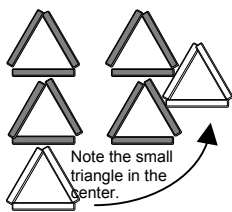


Aggammuuqtuq Math

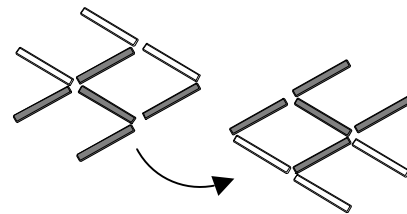
Stick Puzzle #11



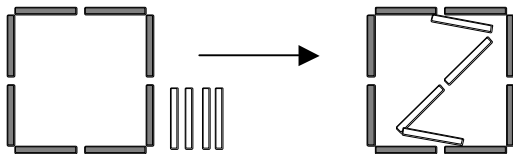
Stick Puzzle #12



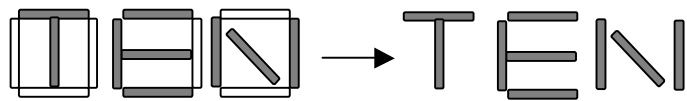
Stick Puzzle #13



Stick Puzzle #14



Stick Puzzle #15



Note the solution spells the word "TEN".