

M16



15-20 minutes



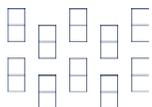
❖ Greedy Gary, the Number Guzzler, from M12



❖ Sheets with different numbers of sails and boats on them



❖ Domino Correspondence Grid sheet (you'll need one per child)



❖ A box of small plastic tokens, counters or similar – 12 yellow and 12 green

❖ 8 dolls or teddies

❖ 8 small baskets or containers

## SAILS AND BOATS

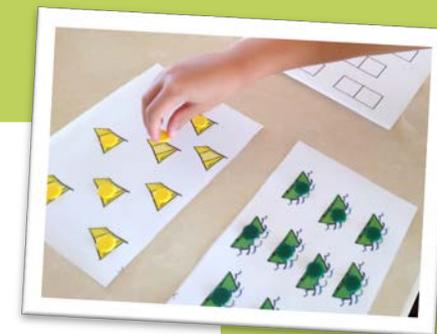


To develop the ability to create a visual model of the mathematical relationship between two sets of objects

To master the action of comparing two sets of objects according to quantity

To foster understanding of the concepts: less than, more than and equal to

To develop the ability to use one-to-one correspondence to match two sets of objects exactly, and to demonstrate the value of this when doing practical tasks



**Note:** When we first ask children to establish whether or not two sets of objects are equal, and to create equality by adding the one missing or taking away the extra one, we try to make it as easy as possible for them to see the one-to-one correspondence by placing the objects in two rows, with each object in one set directly aligned with its counterpart in the other. The next step is to grasp the idea that we can compare two sets of objects even when we cannot physically line them up. To help them learn how to compare two sets of objects quantitatively when it is impossible to line them up and align individual members of one with counterparts of the other, we introduce a visual model. For example, a Domino Correspondence Grid. This way the two sets of objects can be compared 'at a glance'. At first, we have them use tokens that bear some visual resemblance to the objects that they represent. The visual qualities of the token serve as reminders of the object that it represents. Later, as they become increasingly confident symbolic thinkers, we reduce the amount of support we offer, by using tokens that do not provide any visual cues to link them to the objects that they represent.

### Boats and Sails

*Set the scene: There has been a very bad storm at sea, and some sailing boats have returned to the harbour with their sails torn away. The local boat club keeps a stock of new sails in its shop, but no-one knows if there are enough sails in the shop for every boat. Can you help? Can you find out if there are enough sails for the boats?*

Remind them that Gary the Greedy Number Guzzler is watching them, as always!

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Your child can use tokens as support to decide whether or not there is a new sail for every boat and a basket/container for very doll.

Your child can create an accurate visual model of the mathematical relationship between two sets of objects (a properly completed Domino Correspondence Grid).

Your child can use the mathematical language of fewer/less than, more than and equal to meaningfully.



KEY TO LEARNING  
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## SAILS AND BOATS – continued



Give your child one of the sheets with sails, and explain that these are the ones in the shop. Then give them a sheet of boats with one more or one less on it than the number of sails on the other sheet, and explain that these are the boats that have come back from sea. Then give them box of tokens. Listen to any ideas that they have about how they could find out the answer.

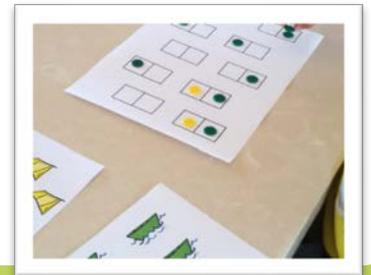
Ask your child to place a yellow token on each sail and a green token on each boat, as in the image on the first page, and then close the token box.

If your child has had some ideas of their own, discuss them and when you have finished, say that there is another way that you want to show them that makes it simple and easy.

Give them the Domino Correspondence Grid. Ask them to move the tokens to the Domino Correspondence Grid, matching one yellow to one green token. Say: *Now you can see at a glance whether there are more sails than boats, more boats than sails or an equal number of each.*

Allow your child ample time to discover for themselves that even if you cannot move two groups of objects next to each other for matching, it is easy to move tokens. Consequently, they can match tokens representing sails to tokens representing boats and then draw their own conclusions about the relative quantity of boats and sails. Help them, as necessary, to see that an equal number of yellow and green tokens means an equal number of boats and sails and therefore the boats can all be repaired, that one more green token means one more boat than there are sails so there will be one boat that can't get a new sail and that one more yellow token means one more sail than there are boats so every boat can get a new sail and there will be a sail left in the boat club shop.

Repeat the game with a different number of sails and boats, to practice more, less and equal, as many times as you want.



**Dolls and Baskets:** Choose a number of dolls and a number of baskets/containers that is one less than, one more than or equal to the number of dolls. Spread the dolls out around the room.

Set the scene: *These dolls are playing right now, but they all want to go to the woods soon to pick mushrooms. We have these baskets that they can use for that. Can you help me find out if there is a basket for every doll?*



Give your child the blank Domino Correspondence Grid and the tokens. Ask them to put a yellow token on the grid every time you move a basket to one side and a green token each time you move a doll.

When you have moved all the dolls and all the baskets, ask: *Can you compare the pairs of tokens and help me work out if there are enough baskets for all the dolls, or if I will have to go to the shops to buy another one?*

Repeat with a different number of dolls and/or baskets as desired, to practise one less/fewer, one more or equal to.

