

SEE & SAY

Learning Objective: Use knowledge of numbers to name the correct number according to the given rule

Intended Outcome: Fluency with numbers and an understanding of place value, counting and the number sequence

Materials:

A list of non-consecutive numbers written on the board

Game Objective:

To SEE the number on the board and SAY the correct number according to the given rule

Instructions:

- This game can be played with a large group.
- The teacher writes a list of non-consecutive numbers on the board.
- The teacher identifies the rule, for example, “Say the number that is one more than the numbers in the list.”
- Using claps to help keep the beat – students together apply the rule to the numbers they SEE and SAY the correct number

Variations:

For more of a challenge, increase the size of the numbers of the board or use a two-step rule, for example, SAY the number that is double the double of the number, i.e. if the number was 6 then double the double would be 24

More detailed instructions and background information about this game are available below.

SEE & SAY

This is a game that I was introduced to at a professional learning session with leading mathematics educator, Peter Sullivan. It can be adapted for use with students from K-6 (and beyond). Although simple to learn, it soon helps to highlight the lack of fluency that many students have with their knowledge of numbers. No special materials are needed to play. It simply requires the teacher to record a list of non-consecutive numbers on the board.

Instructions:

Teacher records a list of non-consecutive numbers on the board (it is important that the numbers are not consecutive as often students will 'rote' learn facts in order. Non-consecutive numbers make this game more of a challenge).

For example:

6, 3, 2, 4, 1, 9, 7, 5, 10, 8

Teacher then chooses the rule which the students will apply in order to SAY the correct number.

For this example, the rule will be:

Name the number that is one more than the numbers on the board

To help the students to maintain a consistent pace the teacher will clap their hands (slowly at first). Remind students that only the teacher claps and the naming of the numbers will begin on the third clap (in my experience this process takes a while to adopt, but after a few goes the students will be able to follow the beat).

On the third clap the students will apply the rule and start to chant the correct number.

For example:

SEE	6, 3, 2, 4, 1, 9, 7, 5, 10, 8	Students will ← SEE these numbers
SAY	7, 4, 3, 5, 2, 10, 8, 6, 11, 9	Students will ← SAY these numbers

In the beginning, the teacher will need to clap at a slow pace, so the students can adjust to the process. Gradually, the teacher should increase the pace of the claps. This will highlight whether the students are fluent with the particular skill. In this example, are students able to confidently identify the number that comes after the numbers in the list or do they need additional assistance in this area?

At this point the teacher has two options. Firstly, they can maintain the same rule, but show students a different set of numbers. For example:

SEE	<i>11, 15, 17, 12, 18, 20, 19</i>	Students will ← SEE these numbers
SAY	<i>12, 16, 18, 13, 19, 21, 20</i>	Students will ← SAY these numbers

Or the teacher can keep the same numbers but change the rule. For example, the new rule could be to identify how much more needs to be added to the number in order to make 10 (this skill would highlight how familiar students are with their tens facts or friends of 10).

SEE	<i>6, 3, 2, 4, 1, 9, 7, 5, 10, 8</i>	Students will ← SEE these numbers
SAY	<i>4, 7, 8, 6, 9, 1, 3, 5, 0, 2</i>	Students will ← SAY these numbers

Other possible rules that teachers could use, include:

- Name the number one less
- Name the number 10 more (or 10 less)
- Double the number
- Halve the number
- Multiply the number by ?
- Divide the number by ?
- Add ? to the number
- Subtract ? from the number
- Build to the next 10 (or other value)
- Round the number to the nearest ?
- Square the number
- Name the square root of the number

Some of the above suggestions may require the teacher to carefully consider which whole numbers they record in their initial list. For example, if wishing students to halve numbers you may only want to choose even numbers in your list. Alternatively, depending on the year level the teacher could use fractions, decimals or percentages to form their list of numbers, then apply rules, including:

- Complete the whole (for example, if $\frac{1}{3}$ was written in the list, students would need to SAY $\frac{2}{3}$ to complete the whole)
- Convert the fraction into a decimal
- Read the decimal using the language of place value (for example, 0.23 is read as twenty-three hundredths)
- Convert the decimal into a percentage (for example, 0.23 is 23%)

The advantage of SEE & SAY is that it really can be adapted for students in any year level and can be used to focus on a whole range of skills. With a little practise, students will soon pick up on the importance of following the clapping beat set out by the teacher (much laughter will ensue while this skill is developed). Initially, students will be challenged by the task. Although students may be able to recall their number facts, when the problem is presented in this way, students need to take more time to think before responding. Overtime, students will become more familiar with this game and gradually their fluency with particular number skills will increase.