The Multi Bead Bar - Teaching Instructions

1) Suggested Ideas for using the Multi Bead Bar with reception pupils (ages 4 to 5 years)

For these activities you will need one Bead Bar.

- Name the first mark at one end 'zero' and the last mark at the other end 'ten'. Start from zero, moving along the Bead Bar a division at a time and ask which number would go at different marks. Use one bead on the bottom runner to mark the position of the number. Slide the remaining beads to the top rung so they are out of the way.
- Count forwards and backwards. Point to random divisions and ask the children to identify the missing number. You can slide the single bead on the bottom of the bar to mark the positions of each division. Start counting forwards and part way through stop and count back by one division before starting to count forward.
- Hold the Bead Bar in the centre to show the position five. Mark this with the single bead. Ask children to count on or back to find the positions of other specified numbers.
- Prepare some of the dry wipe arrows with objects of different sizes. Start adding a set of objects graded by size – the smallest at one end the largest at the other end. Change the order of the objects by moving some out of place on the line – can pupils correct the sequence?

For these activities you will need a Bead Bar marked off in 12 equal divisions using beads.

- Mark each division with a single bead on the bottom of the Bead Bar and slide the remaining beads to the top rung out of the way.
- Start from January. Say the months through to December. Identify the seasons, where the children's birthdays are, Christmas, etc.
- Use as a 12 hour clock. Count the hours from midnight to midday; midday to midnight. Say when school starts, finishes, etc.

2) Suggested ideas for using a Bead Bar with Year 1 pupils (ages 5 to 6 years)

For these activities you will need a Bead Bar using beads to mark the divisions.

- Name one end of the Bead Bar zero and the other 20. Count in twos forward and when confident, backwards. Start counting forwards and part way through stop and count back one division before counting forward.
- Mark each of the 20 divisions with a bead on the bottom of the Bead Bar and repeat the exercise. Now try the same exercise counting in tens, naming one end of the Bead Bar zero and the other end 100. Point to random divisions and ask which ten number goes there. These positions can be marked with a bead.
- Ask the children to help you check answers by sliding beads to fill the area from zero to the point on the Bead Bar identified as another number. Count the beads to see how close they were to being correct. For example, ask the children to point to the position where 40 should be represented on the Bead Bar and mark it with a bead. Slide beads around the Bead Bar so the area from zero to the bead is filled and count the beads to see if you have 40.
- Counting on from five. Call one end of the Bead Bar 5 and the other 15. Mark each of the 10 divisions with a bead. Move your finger along a division and ask the children to identify the number.
- Repeat the above by counting backwards.
- Now mark the Bead Bar into the 10 divisions with beads. Repeat the exercise.
- Repeat this exercise using alternative numbers 10 apart, such as 6 and 16 or 7 and 17, ensuring that the number represented at one end of the Bead Bar is 10 more than the number represented at theother.
- Name one end of the Bead Bar with an appropriate number, eg 9. Ask children to count on from this number. Change the starting number. Start counting forwards and part way through stop and count back one division before counting forward.
- Start with a suitable number larger than 10 ask the class to count backwards. Change the starting number.
- When the Bead Bar is being used as a 0-100, 0 –50 and 0 –20 number line, point to random positions and ask which number goes there. These positions can be marked with a Bead. Note: positions not divisions.
- On a zero to 10 Bead Bar, point to halfway between the divisions. Ask, "What goes here?" Count in halves from zero to ten.
- Use all the beads on the bottom of the Bead Bar arranged in blocks of 10 white and 10 red beads. Point to a position and ask what number goes there and slide away the remaining beads. The children can count the beads to check the result.

For these activities you will need a Bead Bar marked off in 12 equal divisions with beads.

- Prepare some Dry Wipe arrows with times written on and pictures representing times of day (such as a bed or a toothbrush). Use as a 12 hour clock. Count the hours from midnight to midday; midday to midnight. Ask when school starts, finishes, etc. Point to half way between the hours, identify half past each hour. Estimate times between marks on the Bead Bar.
- The Bead Bar can be used to represent Months of the Year in the same way.
- Prepare some Dry Wipe Arrows with pictures representing seasons or names of months. Ask the children to show where March should go, etc.

3) Suggested ideas for using a Multi Bead Bar with Year 2 pupils (ages 6 to 7 years)

For these activities you will need a Bead Bar marked off in 10 equal divisions using beads.

- Point to one end of the Bead Bar and name it with an appropriate number, such as 4. Move a finger along the Bead Bar, a division at a time, with children counting to 14. Point to random divisions and ask, "Which number goes here?" Count forward and backwards. Choose a new starting number.
- Name one end of the Bead Bar zero and count in twos forward and when confident backwards. Start counting forwards and part way through stop and count back one division before counting forward.
- Repeat for counting in fives and tens along the Bead Bar.
- Name one end of the Bead Bar zero. Count in hundreds forward and when confident backwards. Count forwards and part way through stop and count back one division before continuing forward. Point at random divisions and ask which number would go there. Mark with a bead.
- Name one end of the Bead Bar zero and the other end 20. Mark the divisions with beads. Point to the first division and ask what it is. Ask, "How do you know?" If the wrong answer is given, count through to check. Point to ninth division, ask what it is. Ask, "How do you know?, How many twos there are in 18?" This exercise can be repeated for other divisions.
- Repeat the exercise where one end of the Bead Bar is zero and the other end is 50.
- **UK Version** - Using the Bead Bar to count money, metric, length and negative numbers: Name one end of the Bead Bar zero and the other end £1. Count in ten pence's; ask where 5 pence would be. Estimate where other amounts will be eg – 25p, 50p, 75p. Use the beads to count up to the value to check accuracy of the estimate.
- Name one end of the Bead Bar £2 and the other end £3. Count through. Estimate where £2.70 will be. Estimate other amounts.
- Metric Length NB: Each bead on the Bead Bar is 1cm wide. Name one end of the Bead Bar zero and the other end one metre. Count in 10cms. Ask where 15cms would be. Use the blocks of ten white and ten red beads to count in 10cms. Estimate for other amounts.
- Use the beads to check the accuracy of estimates. Measure objects by holding them against the Bead Bar. Estimate the length. Measure objects against the Bead Bar by placing the object so one end is at zero and the other end is marked by a bead. Make sure the end of the bead is in line with the end of the object. Estimate the size in centimetres and then slide beads to measure the object in beads.
- Name one end of the Bead Bar –5 and the end 5. Count from –5 to 5 forwards and backwards. Name one end of the Bead Bar –10 and the other end 10. Count forward and backwards in 2s.
- **USA Version** - Using the Bead Bar to count money, metric, length and negative numbers: Name one end of the Bead Bar zero and the other end $1. Count in ten cents; ask where 5 cents would be. Estimate where other amounts will be e.g. – 25c, 50c, and 75c.
- Use the beads to count up to the value to check accuracy of the estimate. Name one end of the Bead Bar $2 and the other end $3. Count through. Estimate where $2.70 will be and check accuracy using the beads. Estimate other amounts.
- Imperial Measures Name one end of the Bead Bar zero and the other end one yard. Mark the Bead Bar into 3 equal divisions. Count in feet. Ask where 1ft 6î would be. Estimate for other amounts. NB: The actual length of the Bead Bar is 1 metric metre and is slightly longer than a yard. Use the whole Bead Bar to assist with mental calculations but not for actual measurement tasks.

For these activities you will need a Bead Bar marked off in 12 equal divisions using beads.

- Time. Use as a 24 hour clock. Count the hours from midnight to midday; midday to midnight. Say when school starts, finishes, etc. Point to half way between the hours identify half past each hour. Estimate times between marks on the Bead Bar.
- Prepare the Dry Wipe Arrows with numbers 1-12. The pupils can attach these to the loop-tape side to mark the positions.
- Prepare Dry Wipe Arrows marked with images representing times of the day. The children can place them in the correct positions.

For these activities you will need a Bead Bark marked off in 4 equal divisions with beads.

- Decimals and Fractions. Name one end of the Bead Bar zero and the other end 1. Name the positions of one half, one quarter, three quarters. Count zero to 1. Use blocks of 10 beads to slide in a line to check estimates. Each block of 10 will represent 0.1. Each bead will represent 0.01.
- Name one end of the Bead Bar zero and the other end 20. Point to half and ask what number will go there. Similarly find a quarter and three quarters.
- Repeat the exercise for percentages such as 50%, 25% and 75%. Once the 4 divisions on the Bead Bar are mastered you could move to eight divisions.

For these activities you would use the red loop tape side as a blank Bead Bar.

- Name one end of the Bead Bar zero and the other end 10. Ask the children to estimate and explain the position of 3, 5, 8, etc.
- Name one end of the Bead Bar zero and the other end 20. Ask pupils to estimate and explain the position of 5, 7, 10, 15, etc.

4) Suggested ideas for using a Multi Bead Bar with Year 3 pupils (ages 7 to 8 years)

For these activities you will need the Bead Bar marked off in 10 equal divisions using beads.

- Use the red loop tape side of the Bead Bar. Counting in twos, fives and tens as suggested for year 1 and year 2. Name one end of the Bead Bar zero. Count in hundreds forward and when confident backwards. Start counting forwards and part way through stop and count back one division before continuing forward. Now try using all the beads in position on the bottom rung.
- Name one end of the Bead Bar zero and the other end 100. Point randomly at one of the ten divisions and ask which number would go there. Repeat as above but counting in thousands where each of the ten divisions represent 1000 and the whole Bead Bar represents 10000.
- Use the Bead Bar as 0 –10 marking each division with a bead. Point to each division. Stop at the halfway position between two divisions and ask which number would go there.
- Name one end of the Bead Bar zero and the other end 30 and mark each division with a bead. Point to the first division, ask what it is. Ask "How do you know?" If wrong answer count through to check. Point to eighth division, ask what it is. Ask "How do you know?" Ask "How many threes there are in 24?" Ask "What is 24 divided by 8?" Repeat for other divisions. Do this for zero to 40, zero to 50, etc.
- Using the Bead Bar as zero to 30, estimate where 10, 20, 25 will be.
- Using the Bead Bar as zero to 50 estimate where 10, 25, 40 will be.
- Negative Numbers. Name one end of the Bead Bar zero and get the children to count back from zero (introducing negative numbers). Count from minus 10 to zero, minus 20 to zero, minus 10 to +10 etc. Identify the position of 3, 5, 9, -3, etc. Point at random divisions and ask which number would go there. If the children are confident try counting steps of minus 2.
- Metric Distances and Weights. Name one end of the Bead Bar zero and the other end one kilometre. Mark the 100m intervals with a bead. Count on in intervals of 100m. Ask for random divisions. Ask where 250m, 750m will be. Ask the children to estimate other distances. Repeat the above for zero to a kilogram.
- Counting forwards and backwards using patterns. Using the Bead Bar to count in 20s, 30s, 40s etc. Apply knowledge of multiplication tables to develop understanding of multiples of 20, 30, 40 etc.
- Name one end of the Bead Bar zero and the other end one. Identify each division as a tenth. Count in tenths from zero to one. Identify five tenths as one half.
- Name one end of the Bead Bar four and the other end five (for example). Count in tenths. Identify four and five tenths as four and a half.

For these activities you may use either a 4 or 8 division Bead Bar:

- Continue to develop the Year 2 work on halves and quarters by using the Bead Bar to find half, a quarter, three-quarters of a variety of numbers.

For these activities use the red loop tape side of the Bead Bar

- Name one end of the Bead Bar zero and the other end 10. Ask the children to estimate and give reasons for the position of 2½, 6½, 8, etc.
- Name one end of the Bead Bar zero and the other end 100. Ask the children to estimate and give reasons for the position of 25, 60, 80 etc. Point to a position along the Bead Bar. Ask the children to estimate the number that will go there and give reasons for that decision. Ask other pupils if they agree. Check the answer by sliding the beads. Suggest a number and ask the children to decide on its position.

5) Suggested ideas for using a Multi Bead Bar with Year 4 pupils (ages 8 to 9 years)

For these activities you will need A Bead Bar marked off in 10 equal divisions with beads.

- Prepare the Dry Wipe arrows with numbers such as multiples of 7, 8 and 9. Count forwards and backwards, using patterns of 7, 8 and 9 starting from zero. Place multiples of 7, 8 and 9 along the Bead Bar using prepared Dry Wipe Arrow Cards.
- Name one end of the Bead Bar zero and the other end 70. Point to the first division, ask what it is. Ask how do you know? If the answer is wrong, count through to check. Point to sixth division, ask, "What it is?" Ask "How do you know?" Ask, "How many sevens there are in 42?" Ask, "What is 42 divided by 6?" Repeat for other divisions. Repeat for zero to 60, zero to 80 etc.
- On a zero to 70 Bead Bar, estimate where 10, 20, 50 will be. On a zero to 90 Bead Bar estimate where 10, 30, 60 will be. Count in negative numbers, minus 30 to zero, minus 10 to zero, or minus 20 to 20 etc.
- Name one end of the Bead Bar minus 10 and the other end 10. Ask where zero will be. Establish that each division is two, count from –10 to 10. Point to random divisions and ask what goes there. Point halfway between divisions and ask what goes there.
- Name one end of the Bead Bar zero and the other end one. Identify each division as a tenth. Count in tenths from zero to one. Identify five tenths as one half, two tenths as one fifth.
- Name one end of the Bead Bar three and the other end four and count in tenths. Identify three and five tenths as three and a half and three and two tenths as three and one fifth.
- Call one end of the Bead Bar zero and the other end 1. Count in tenths pointing to each division. Use decimal notation. Repeat for a four to five Bead Bar and a six to seven Bead Bar.
- Name one end of the Bead Bar zero and the other end 10000. Count in thousands. Ask 'Where will 2500 be?' Point to halfway between divisions and ask, 'what number goes here?' Ask them to estimate the position of other numbers. Where might 7000 be on the Bead Bar?
- Use the Bead Bar to count in 200s, 300s and 400s. Apply knowledge of multiplication tables to develop understanding of multiples of 200, 300, 400 etc. Extend to division by asking how many 200s are there in 1000.

For these activities you may set up either a 4 or 8 division Bead Bar:

- Name one end of the Bead Bar zero and the other end 1. Point to the middle then ask, "What it is?" Point to the second division, ask what it is. Ask where three-quarters will be. Identify the eighths; ask how many eighths make a quarter, a half, etc. Count in eighths from zero to one.
- Name one end of the Bead Bar two and the other end three (for example) count in eighths.
- Name one end of the Bead Bar zero and the other end 80. Point to halfway and ask what number goes there. Point to a quarter, three-quarters and ask for the numbers. Ask children to explain their working out. Try eighths. Try zero to other multiples of 8.

For these activities you will need a Bead Bar marked off in 12 equal divisions using beads.

- Name one end of the Bead Bar zero and the other end 1. Count in twelfths forwards and backwards. Establish easy equivalence first; half and quarters, then go on to show equivalence for thirds and sixths.

For these activities you will require the loop tape side of the Bead Bar

- Point to one end of the Bead Bar and name it zero and the other end name 100. Ask pupils to position numbers eg, 70, 30 and give explanation. Point to random positions and ask the pupils which numbers they estimate go there. Ask pupils to position numbers and ask for reasons.
- Change the end of the Bead Bar to 500, 1000 and repeat.
- Change the end of the Bead Bar to 1 andestimate the positions of fractions and decimals. For example 1/2, 4/5, 3/4, 0.5, 0.25 and 0.8.

edtech
www.edtech.co.uk

Tel: 00 44 (0) 191 268 2222
Fax: 00 44 (0) 191 268 1137
e-mail: enquiry@edtech.co.uk
www.edtech.co.uk