A home "pack" for parents to support their children whilst not in school.

Aim was to make the "pack" a minimal amount of resources that can either be delivered, accessed on-line or made at home. It is also anticipated that the parent/mentor will use items easily collected at home, for example pebbles or milk bottle tops as manipulatives.

The term mentor is used rather than parent as it is quite likely that this will not be exclusively a parent but could be an older sibling or other relative. The term learner is used and the age range for the pack will initially be focusing on arithmetic skills in the early primary phase. Though these will be appropriate for children across the Primary phase depending on their progress level.

Please note: It is better for children to be comfortable with the content rather than push them on too early to unfamiliar content or procedures. Where possible mentors should guide avoid "telling" but instead listen carefully to learners and gauge their understanding.

The content covered includes;

- Recognising whole numbers from small values using subitizing to larger values using place value.
- Recognising additive facts and operations using both manipulatives and symbols
- Understanding column addition and subtraction using both manipulatives and symbols.

To help mentors understand the thinking behind some of these concepts, there is available support at www.capacitarpais.com/early-primary-phase

Further content (to be added later) will develop the same style of activities to include multiplicative concepts.

In general, the activities will fall into simple categories.

- Recognising a number from a given set of manipulatives and choosing appropriate symbols.
- Recognising a number from a given set of symbols and being able to represent using manipulatives.
- Recognising an operation* from a given set of manipulatives and choosing appropriate symbols.
- Recognising an operation from a given set of symbols and being able to represent using manipulatives.

Where appropriate activities will extend into "find the missing number".

NB: Operations to include addition, subtraction (including both "take-away" and comparison) as well as the use of the inequality symbol.

Following these mentor notes the contents of the pack contains.

- Cards printed with symbols and numerals (that will need to be cut).
- Tens frames
- Written instructions

The mentors will need to collect for use by the learner

- Pebbles (or similar) to act as counters to represent "ones"
- Sticks (or similar) to represent "tens"
- Miscellaneous items such as a crisp packet

Activity 1: Guess the number

Aims: -

- Develop subitizing skills
- Instant recall of small number of items
- Link small number of items to the correct numeral
- Be able to recognize the complement to five (and ten)
- Start to use the tens frame

1 or 2 learners but can be adapted to be played with more.

Mentor needs a number of pebbles (around twenty) and an empty crisp packet.

Learners need a tens frame each.

Mentor secretly puts a small number (suggest 1 to 5) of pebbles in the "bag" and asks the learners to guess how many there are. Learners can take turns, so the second can't guess the same as the first.

Mentor empties the bag and learners call out the number and decide who is correct. The correct learner puts the pebbles on their number frame and the mentor chooses a new secret set of pebbles.

Explanatory video - https://youtu.be/wu5nefpnD4I

In time the learners will fill their tens frame. If appropriate the mentor can swap a "tens" stick for a complete set of ten pebbles.

Lots of opportunities for the learners to recognize numbers to five through subitizing and then checking by counting if necessary. The learners will also build up their score by collecting pebbles up to and beyond ten. The mentor can ask questions like "How many have you got so far?", "How many do you need to get five/ten?"

Additionally the learners can be asked to select from the symbols what score they have each time and as they collect more pebbles swap their card for a new more up to date symbol, which may in time include a second digit once they reach ten. In which case they could exchange ten pebbles for a stick!

Whilst activity 1 is presented as a game-like activity, the remaining proposed activities are not presented as a game. However, they can be successfully worked into a game if mentors wish.

By playing a simple popular game such as "Snakes & Ladders" mentors can build activities into the game before each player's turn. For example, players can "earn" their throw of the dice by completing a learning task successfully. It may be that mentors choose the same activity each time or these can be selected at random e.g. from a pack of cards with each activity name on them.

It's worth noting that adults playing with the children should also do an activity when it's their turn. This provides the opportunity for the adult to model how to answer a question as well as giving the learner an opportunity to be the "mentor" or teacher. This also provides useful role modelling of a positive attitude towards education for the child.

Activity 2: What's the sum? (Numbers less than 10)

Aims: -

- Reinforce recognition of number & subitizing skills
- Identify small groups of items as part of a sum
- Link the manipulatives with the symbolic representation
- Consolidate use of the tens frame

Show numbers a groups of pebbles two (or three) groups.

Learners to describe as a sum and calculate the total.

Use tens frame if necessary.

Represent the sum and total in symbols, where appropriate exchange ten.

Explanatory video - https://youtu.be/LirzO2fCtws

Activity 3: Greater than/ Less than

Aims: -

- Reinforce recognition of number & subitizing skills
- Identify greater than and less than amounts
- Introduce the inequality symbols
- Recognize the difference as a subtraction

Show two groups of inequal counters/pebbles.

Learners answer, which is greater/smaller and by how much, choose the appropriate symbol & numerals.

Create an equality number sentences

Large number – small number = difference

Explanatory video - https://youtu.be/t-IBEVUgFfg

NB: In the example the larger number was shown in the left hand row, this doesn't always need to be the case. The question could also be which is smaller? Mentors need to be comfortable with the correct use of the inequality symbols. See - https://youtu.be/hry2yANVUIg

Additional: Potentially create other associated number sentences i.e.

Large number – difference = small number

Small number + difference = Large number

In each case using the manipulatives and appropriate symbols.

Activity 4: Interpreting number sentences (using single digit numbers only).

Aims: -

- Link symbolic representation with a possible manipulative scenario
- Develop recall of simple additive facts & number bonds

Show an additive operation (including subtraction) in symbols.

Learners to represent an interpretation with manipulatives, where appropriate act out the operation.

Explanatory video - https://youtu.be/YoK_tzbcFHY

Activity 5: What's the missing digit?

Aims: -

- Reinforce recognition of the manipulatives with the symbolic representation
- Consolidate recall of simple additive facts & number bonds
- Begin to develop problem solving skills

Show a symbolic additive question Including subtraction) using symbol cards with one of the cards turned over.

Learners to calculate the missing digit, using manipulatives where appropriate to help.

Explanatory video - https://youtu.be/PJ_5WUJksCw

The later activities are similar examples of the previous activities but with larger numbers that begin to require a confident use of exchanging ten ones for one ten. This in turn will develop the formal skills of arithmetic used in column addition and subtraction.

See this link - https://youtu.be/P3e9l7lI9kc for an explanatory video around exchanging tens

Activity 6: Name the number (2 digits numbers)

- Instant recall of two digit numbers
- Link two digit names, numerals and manipulatives reinforcing place value
- Be able to recognize the complement to next whole ten.
- Start to develop rounding skills

Show a number as a combination of sticks and pebbles (up to 9 each).

Learners to verbally name the number correctly and select the appropriate digit cards

Additional: Mentors could ask

- What's the number made of? (E.g. Twenty-three has two tens and three ones)
- How many more are needed for …? (The next whole ten*)
- Is this number closer to …? (The whole ten* above and below)

*The number rounded to ten e.g. Twenty, thirty etc.

Explanatory video - https://youtu.be/BDypx6ehXyM

Activity 7: What's the sum? (Numbers greater than 10)

Aims: -

- Reinforce recognition of two-digit number & place value
- Link the manipulatives with the symbolic representation of a sum.
- Calculate using the column addition process
- Where appropriate consolidate use of exchanging a ten for ten ones

Show two numbers as groups of sticks and pebbles (and to begin with mentors can help by also giving the symbols although later this can be done by the learner).

Learners to describe as a sum and calculate the total.

Represent the sum and total in symbols.

Explanatory video - https://youtu.be/eXzrvB1zDbg

NB: Learners can use tens frame where appropriate to help them exchange ten ones for a ten, but in practice they will move to just exchanging ten pebbles for a stick. https://youtu.be/P3e9l7lI9kc

Activity 8: What's the difference (numbers greater than 10)

Aims: -

- Reinforce recognition of two-digit number & place value
- Link the manipulatives with the symbolic representation of an inequality.
- Calculate using the column subtraction process
- Where appropriate consolidate use of exchanging a ten for ten ones

Show two numbers as groups of sticks and pebbles.

Learners to recognize the greater and smaller and describe how to find the difference.

Represent the subtraction (unless counting on) in symbols. Use tens frame where appropriate to help them exchange ten.

Explanatory video - https://youtu.be/AnYMB9yXtpE

Activity 9: Interpreting calculations (using double digit numbers).

Aims: -

- Link symbolic representation with the manipulative scenario
- Consolidate process of column addition & subtraction

Show an additive operation (including subtraction) in symbols.

Learners to represent an interpretation of the symbols with manipulatives, where appropriate act out the operation.

Explanatory video - https://youtu.be/wFXFvMBDakw

Activity 10: What's the missing digits?

Aims: -

- Consolidate process of column addition & subtraction
- Develop problem solving and reasoning skills

Show a symbolic additive question (including subtractions) using two- digit numbers.

Turn over two of the cards (any card in the tens column and any card in the ones column)

Learners to work out what they missing values are and to explain their reasoning.

Explanatory video - https://youtu.be/pNFdyE7GD_4

1	2	3	4	5
6	7	8	9	0
1	2	3	4	5
6	7	8	9	0
1	2	3	4	5
6	7	8	9	0
1	2	3	4	5
6	7	8	9	0
+	-	=	>	<
+	-	=	>	<