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MATHS ENCOUNTERS

* G.P. Dawson

First thing: Aboriginal parents have asked the schools to teach balanda maths. They want their children to have the skills and knowledge to deal with the future.

Second thing: But not at the cost of Aboriginal way of life.

We have the job of doing these things, so we have to find a good way to teach balanda maths.

While I'm working with Yolngu I always think of Aboriginal Learning Styles.

1. Watching and copying, not much teacher talking.
2. Students try for themselves, many many times.
3. Real life performance.
4. Learning when you need/want to learn.
5. Friendly relationships so people will learn with each other.

If I'm teaching, and no one's learning, I look at these things again.

If I follow all these rules then my best maths teaching will be this:

1. Maths things I do every day.
2. Maths things the students do every day.
3. Real life maths things we do every day.
4. Maths things the students like doing, want to do.
5. We all like each other and have fun together while we learn

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Concentrated Maths Encounters

Every day at the same time the teacher asks the same questions using the same language and students answer them using the patterns the teacher has given them.

Think about what you are going to say and what the students will answer, then write it all on a chart.

Do all your maths thinking out loud to show the students how you work out all these things.

The things we do every day in the classroom use maths skills. But teachers do these things by themselves and don't teach the students how to do them then and there. They try to teach it later in a lesson and the students can't see the meaning.

Here are some of the daily maths encounters I found in my classroom:

1. Bell times
2. Roll call and attendance
3. Birthdays
4. Giving out and packing up equipment
5. Tidying our work area
6. Timetables
7. Calendars
8. Art/Craft activities
9. Sport
10. Ordering things for the classroom
11. Personal dossiers, profiles
12. Food, lunch orders, celebrations, parties, cooking
13. Brushing teeth
14. Excursions
15. Videos

How old are you?

When do we have sport?
Fridays at 2 o'clock.

:s, cooking

What's the time please?

Five past	☐	Twenty five to	☐
Ten past	☐	Twenty to	☐
Quarter past	☐	Quarter to	☐
Twenty past	☐	Ten to	☐
Half past	☐	Five to	☐

Is that the first or second bell?

It's the first bell.

Quickly! Only five minutes to get ready for school.

How long until Christmas?
☐ months ☐ weeks and ☐ days.

Estimate how many students here today.
About ☐.

1. BELL TIMES

Language:

What do you think the time is? Have a guess (estimate).

What time's the bell?

How long until the bell?

How much longer can we play?

Have I enough time to go to the toilet/wash my hands/get something to eat?

That's the first bell. How long till the second bell?

Is five minutes enough time to keep playing, wash hands, toilet and get my things ready?

Is it half past eight yet? Should I hurry? Can I go slowly?

Ideas:

1. Big clock face near classroom clock. Move the hands to bell times. First one to notice when they match rings the bell.
2. Each school has a digital and round clock outside.
3. Loudspeaker countdowns to bell times by students. "It's ten past eight, twenty minutes to the first bell."etc.
4. Classroom countdowns five minutes before the bells, as students pack up.
5. Talking clocks, $40 in K Mart.
6. Kitchen timers. "Keep reading for 20 minutes. The buzzer will sound."
7. How long's one minute? Put your head down and come up when you think one minute has passed.
8. Was the bell early, late or on time today? Record on tally sheet, or graph.
9. Beat the bell. All those ready before the bell record on tally sheets or graphs each day.
10. Class sets of $5 watches. Keep asking students what the time is.

The most important thing is that the teacher says out loud all those 'time' things they are thinking.

Let's see if you can keep your little heads down for **Three whole hours!**

2. ROLL CALL

Language:

About how many kids here today? (estimate)

About how many kids away?

Who made the closest estimate?

Are there more or less than yesterday?

How many students enrolled in this class?

How many students here today? (count)

How many away?

How many 8/9/10 etc year olds here today?

How many boys/girls/Narritjan/Gamarran etc here today?

How many boys/girls/Gudjuk/Gudjan etc absent today?

Have we enough desks for every one today?

How many desks have people in them?

How many empty desks?

Have we enough chairs for every one today?

How many chairs have people in them?

How many chairs are empty?

Who's had 100% attendance?

Ideas:

1. Graph daily attendance on a big chart. Colour one square for each day. Display this in the community at end of term.
2. Line graphs of different groups' attendance - malk, m/f, age etc.
3. Desk/chair plan of classroom. Use blu tack to stick little body symbols on each day if the student's present, remove if absent. Count present and absent. How many groups of 3, 4, 5 etc.

3. BIRTHDAYS:

Language:

What's your date of birth? (birthday)

Anyone having a birthday today?

Who has a birthday this month?

Who had a birthday last month?

Who has a birthday next month?

How many months/days until your birthday?

How many people have January/Feb/March etc birthdays?

Who has a birthday on the first/second/etc of the month?

What's your birth sign? (Signs of the Zodiac)

How old are you today? (Years, months, days)

Who's the youngest person in the classroom?

Who's the oldest person in the class?

Who's the younger of you two?

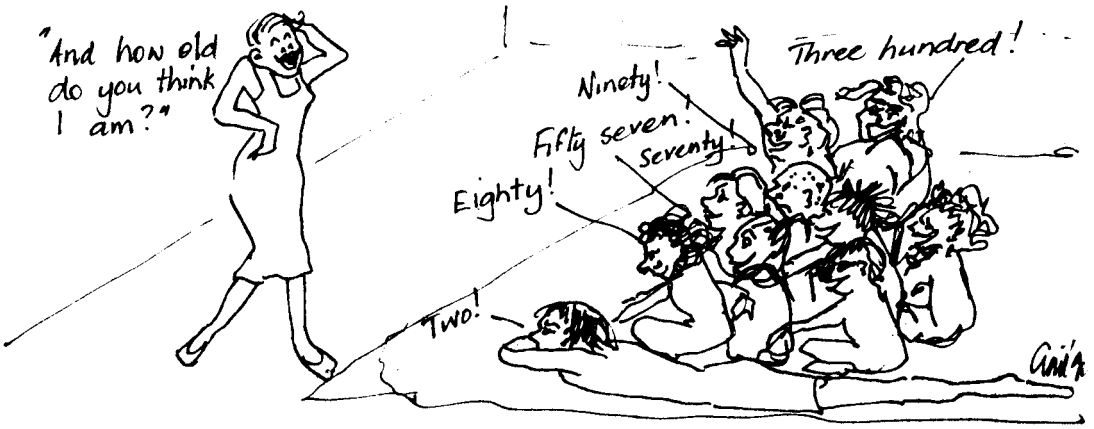
Who's the elder of you two?

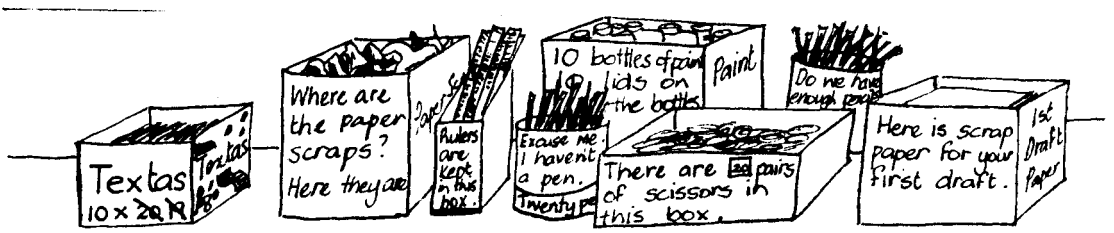
What's your position in the family?

How old will you be in 1995/6/2000?

Ideas:

1. If you tell us the day before your birthday, we'll make you a birthday cake.
2. If you tell us a week before your birthday, we'll have a birthday party for you.
3. Every worksheet has Name, Address, Date of Birth, Age, Date at the top. More personal particulars as for government forms for post primary.
4. Mark birthdays on a big calendar.
5. Older students have personal calendars, or diaries with birthdays marked.
6. Graph how many birthdays in each month. Eash person decorates their own square, name on it. Refer to it each day.
7. Calculate ages each day. Years, months and days for post primary. Ask each day, they answer "I'm yrs, months and days old.


"And how old do you think I am?"
Two!
Eighty!
Ninety!
Fifty seven.
Seventy!
Three hundred!


Textas
10 x 20 R
Where are the paper scraps? Here they are
Paper
Rulers are kept in this box.
10 bottles of paint lids on the bottles
Paint
Excuse me I haven't a pen.
Twenty pe
There are pairs of scissors in this box.
Do we have enough paper
Here is scrap paper for your first draft.
1st Draft Paper


"I see something that doesn't belong!"

5. TIDYING OUR WORK AREA:

This section is about classification. It depends on setting up everything in labelled boxes/jars/tins so that you can find them easily when you want them. If the work place is always messy look at a system the kids can use easily. You are teaching them skills which are very important for getting and holding information. (Filing, computers, phone books, directories).

Language:

Look for something that's not in it's right place.

Can you see something that doesn't belong?

Which set does this belong in?

Put all these things in sets.

What name will we call this box (set)?

Why do all these things go together?

What's the same about all these things?

What's different about these things?

Where will I find a .....?

Do you think the.....will be in this box?

What's the same/different about these sets?

Which boxes (sets) belong together?

What name will we give all these sets together?

Ideas:

1. Make boxes/jars/tins/baskets. Label them. Count and list contents. Check daily, match counts. Estimate quantities.
2. Group like things together. Say why they belong together.
3. Sometimes students will classify things differently to balanda way. Are we teaching a particular way of classifying, or the skill of classifying?
4. Use these classifying exercises whenever things look messy and at the start and finish of session, the day.
5. Link the classifying to ordering new equipment. Let students see the long process of getting new supplies.

6. TIMETABLES:

Language:

What will we do at 8/9/10 o'clock?

What do we do after maths/language/library?

What do we do first on Tuesday?

What comes after Sport?

What will I be doing on Monday at 10.30?

Which lesson is the longest?

What time do we start USSR?

What do we do next?

What books do you need for the next session?

How many days until we have sport again?

What time do we finish this lesson?

I'm planning tomorrow's lessons. What comes after Handwriting please?

Ideas:

1. Teachers always look at timetables, but don't show students the patterns. Timetables should be displayed by everyone in the classroom.
2. In Preschool/Transition draw little pictures to show the patterns of the day.
3. Always talk out loud when you look at the timetable.
4. Ask students to tell you what's next.
5. Colour code the timetable so students can see the patterns of the days.
6. Students and teachers feel secure in a routine that they know.
7. Put a copy of your timetable outside the room so others know when they can't interrupt your class, like during USSR.
8. Also, students can discuss and compare their timetable with others.

7. CALENDARS:

Language:

What's the date today?

What's today?

When's your birthday?

What date do holidays start?

When are we going to .....?

When are the Arnhem Sports?

What's next Monday's date?

How long until the holidays?

How many weeks do we have for holidays?

How long until Christmas?

How long until my birthday?

How many months until end of term?

How many weeks in a term?

When's the next pay week?

How long until payday?

What day is your birthday on this year/next year/last year?

Ideas:

1. Everyone has their own calendar with important dates marked.
2. Cross off days.
3. Count how long until holidays every day.
4. Count the days until Christmas.
5. Do takeaway/adding on sums every day to find out how long until .....
6. Mark days present/absent.
7. Show the lunar calendar. Mark moonrise times, sunrise, sunset.
8. Have a tide chart in the room.

8. ART AND CRAFT ACTIVITIES:

Language:

How much paper/plasticene/glue will we need?

What size paper will we use?

How big's that piece of cardboard?

Is this enough glue/paper/paint?

Get a piece of paper the same size as this.

How can I make this the same size?

Will this fit into this?

What size writing looks best?

How many centimetres is that?

Is this model the right size to go in that house?

Which one is bigger/smaller?

What will you do next?

Ideas:

1. Show a completed model and let the students work out how to make it. As they solve the problem you will see what skills you need to teach.

2. TEACH students how to hold scissors, glue things, cut things in the best way.

3. Show a completed model and then ask what you will need to make another one the same. Ask about quantities of materials.

4. Students report on how they made something, including quantities, measurements. (Explanatory, report, procedural texts).

9. SPORT:

Language:

How many in each team?

How many teams?

Are the teams even?

Are there any people left over?

What equipment do we need?

How many of each?

How long will we take to get ready?

We took 10 minutes to get ready. How much longer do we have to play?

What do you think your score will be?

What's the difference between your estimate and your score?

Which team had the highest score?

How many points did you win by?

What's the difference between the scores?

What do you think your time will be for this race?

Is your time better than yesterday?

Ideas:

1. Time all races and record scores.
2. Race cochroaches, geckoes, crabs, ants, snails.
3. Students use the stopwatches, kitchen timers.
4. Teach tally systems.
5. Publish scores. Show computations for comparing scores.
6. Make line graphs of scores to show improvements.
7. Count all equipment when you finish and put it in the correct set/box.

10. ORDERING THINGS FOR THE CLASSROOM:

Language:

How many of these things do you think we'll use this term?

Will we have enough?

How many should we order?

How many do you think will get lost?

How many did we lose last term?

Did we lose more or less this term?

How much do you think this costs?

Where can I buy these? (Classification - what kind of shop?)

How much will it cost for 10 of these?

How much will all of that cost?

Will we have enough money?

Add up the receipts. How much did we spend?

What will happen if we run out of these?

Ideas:

1. Make charts with symbols of pieces of equipment. Cross items out when they are lost or used up.
2. Count everything every day and change quantity labels.
3. Have copies of catalogues in the classroom.
4. Have chart of money available and do takeaways on it to show running totals.
5. Make class orders up with the students.
6. Mark ordering times on the class calendar.
7. Make charts of 'Assets' of your classroom. Change it when things are lost, used up.

scissors		20 □ □ = □
pens blue		25 □ □ = □
pens red		25 □ □ = □
pencils		30 □ □ = □
rulers		30 □ □ = □
rubbers		20 □ □ = □
pkts 10 textas		26 □ □ = □

11. PERSONAL DOSSIERS, PROFILES:

Language:

What's your name?

Where do you live?

Where's that?

What's your postal address?

What's the postcode?

How long have you lived there?

How many people live there?

Where's your house?

How many in your family?

What's your position in the family?

What's your date of birth?

How old are you?

How tall are you?

How much do you weigh?

What size clothes/shoes/hat do you wear?

Ideas:

1. Students make up a personal file at the start of the year. Decide what to put in it. Take a photo. Samples of work.
2. Graph measurements. Put on overhead projector screen. Compare with measurements at end of year.
3. Draw body outline at start and end of term, year. Compare.
4. Have bathroom scales, measuring tapes, growth chart available in the classroom.
5. Draw town maps and mark houses, make little people to put in the houses.
6. Make scale drawings of all students and compare height.
7. Make bar graphs of all the measurements for easy comparison.
8. Write these personal information items on worksheets every day.
9. Ask these questions every day until students know the answers.