

Foundation Stage
Science Activities

Tom Robson (TRedu)
Supporting Early Years Science



DRY SAND
Free Play.
Vary equipment – tunnels,
sieves, containers.
(exploration of properties)

Making an environment
seaside/garden model –
people, creatures.
What and why have you
chosen?

WEST SAND
Free Play.
Making a sandcastle.

SAND WHEEL
Play – eventual teacher input –
questions?
(pour, push)

SAND

FOOTPRINTS/HANDPRINTS
Patterns in sand – different
tools.
Try in dry sand.
What happened and why?

TREASURE HUNT
Magnets – find things in dry
sand?
Treasure left behind?
Sort into 2 sets. What can
you tell me about them?

Dry sand in musical
instruments.
Different sounds?
Wet sand too?

Find a way to make a tunnel
or hill (properties)

Does the sand dissolve in water?
What happens when you stir the sand? Shake the sand?
Leave it.

Properties of wet and dry sand.
What sand is best for moulding?
What sand is best for sieving?

Can you find the treasure using a magnet?
Have you found it all?
Why is some left behind?

How can you move the sand without touching it?
Compare wet and dry sand.

SAND

Provide other materials dry.
Which behave like sand?

Comparison of wet/dry weight – use scales.
Equal amounts in each pan.
Why is there a weight difference?

Car run/marble run.
Compare wet and dry.
Which works?

Use wet/dry sand.
Which one will make the sand wheel turn?

Can you make a sandcastle/
track / tunnel using dry sand?
What happens?
What do you need to do?

MAGNETIC GAME
What can you find in the
sand?

SANDWHEEL
Can you make the wheel
turn?
Go faster?
Slower? Stop?
Use wet / dry sand.

Can you make a garden
pond?
Choose the appropriate
materials.

SAND
**Where does sand
come from?**

Rolling objects down a slope
into the sand.
Onto the floor.
What happens?

Using sieves.
Add different substances as
well as sand and use different
size sieves to sort.

Can you make the car move in
the sand?
Does it make a difference
whether you use wet/dry sand?
Try other materials e.g. wood,
paper, fabric etc.

What else is like sand?
(e.g. sugar/salt)
Similarities/differences.
What happens when you add
water? Pour?

Patterns
Make in both wet and dry.
What happens?

Flow and pouring
Using water-wheel, jugs, bottle,
funnel, fork to pour.
Which flows/pours?
Using containers/moulds which
holds shape when turned out?

Printing
Using variety of
containers/moulds.
Which sand can you print
with?

Matching – Touch
Hiding objects in both trays –
can you find matching
objects?

SAND
Wet and dry.

Make a path
Which object moves along
the easiest?
Do you know why?

Change
Put objects in sand.
Do they change?
Does the sand stick to
anything?

Magnets
Hide objects in sand.
Use magnet to find them.
Is it easier in wet or dry
sand?

Blindfold child and ask them
to find object hidden in sand.
Can you tell if it is wet or dry
sand?

MOVING WATER
Pumping, pouring, wheel-
pushing, splashing, lots of
water --through a sieve,
blowing bubbles.

CAPACITY
Fill/empty.
Non-standard measuring –
how many cups etc.

BOATS
Forces – ways of moving.
Loading boats.
Sail shapes.
Making boats, different
materials.

FLOATING/SINKING
Different shapes.
Placing on water in different
ways.

WATER PLAY

Reflections
(outside)

**WATERPROOF
MATERIALS**
Washing materials.
Cooking.

**WHAT DO WE USE
WATER FOR?**
In class/ at home.
In/on body.
Hygiene.
Growing things.

PROPERTIES
Feels like, looks like.
Description of evaporation.

RESOURCES
Water tray.
Assorted containers, some with holes.
Syringes, pumps, water pistols, funnels, sieves.

FILLING
Full/ Half full / Empty
Which container holds most – guess and find out.
Bottles – sound.

POURING
Can you pour without spilling?
How can you pour into a narrow necked bottle without spilling?

EMPTYING
Empty bucket without tipping.

WATER PLAY

MOVEMENT
How can you make the water wheel work?
How can you move the boats without touching them?

FLOW
Which way does water go when poured?
Can you make it go up / sideways?
Make a puddle disappear.

HOLES
Can you fill – buckets with holes?
Minute timer?
Sieve?
Bottle with holes?

PUMPS
How do they work?
Which pump will empty a bucket quickest?

Can you make the boat move?

Can you find one object that floats and one object that sinks?

Can you move the water up?
(pumps, straws etc.)

Can you paint with water?

Can you make the water wheel move fast/slow?

WATER PLAY

Can you make a boat to float?
(restrict to 3 different materials)

Watch the water come out of the lemonade bottle with holes in.
What is happening?
(flow, pressure, speed)

Which bucket holds the water longest?
Can you fill the buckets in a different way?

How many times will the little container fill the big container?

FEELY BAGS
Different surfaces
Sorting
Colour

SOUND
Vehicles made from each kit.
Which makes the loudest /
quietest sound?
Why?

PATTERN OF BRICKS
Strong wall using "X" bricks.

MAKE A RAFT
How many animals will it
hold before sinking?

CONSTRUCTION

GEARS
Make a merry-go-round, and
make the people go round on
it.
Can you stop them?

Can you make a vehicle with
a hinge?
(need to explain hinge)

Which vehicle travels the
furthest on the carpet/ tiles?
Why?
Can you make it move
without touching it?

LEGO
How can the car get across
the river?
Don't stop the boat sailing!

How many cogs can you
make move?

Make a Shape.
What makes it strong?

Build a wall.
How can you test which is
strongest?

Make a cart for Teddy.
How could you pull him
along?

**CONSTRUCTION
TOYS**

How long can you build a
bridge?

Can you move it without
touching it?

Make a car.
How many ways can you
make it move?

How high can you build a
tower?



Can you make a little cog
turn a big cog?
How many big cogs will your
little cog turn?

Can you build a tall wall?
How high can you build it?
Does it fall over?

Can you make a long bridge?
Will your car drive across it?

Can you make a strong wall?

CONSTRUCTION

Can you sort the bricks?

Can you make a car?
Can you make it move?
When does it stop?

How can you make your car
go further?
Put some luggage in.
Does it go as far?
Does it go further?

With a ramp – how far can
you make your vehicle go?
Can you make it go up the
slope?
(string, yoghurt pots,
marbles)

Can you make some furniture for a toy/ the dolls house?

How can you make it move faster/further?

Can you make something that moves?



Can you make something that will hold?

CONSTRUCTION TOYS
(plastic)

How many cogs can you link together and move at the same time?

Which is the best construction toy to make?

Can you make something with one/ two colours?

Can you make something very tall/wide/large?
Which is taller?

Can you make homes for some of the zoo animals?

Can you make a boat that floats?

How many cogs can you make move using only one turn?

What is the tallest tower you can make with centicubes?
Can you make it stronger?

CONSTRUCTION

Can you build a car for teddy to travel in?

What is the longest bridge you can make between 2 tables, using mobilo, that a duplo person can sit on?

What can you build with the lego/duplo using pieces of one colour?
e.g. all red pieces

Can you make a fairground ride which moves?

Predict what you might be able to collect from the school grounds.
Equipment needed.
Walk – collect.
Sort / match.
Ask reasons for the set.

Where do plants grow best?
Why?
Grow own plants in grounds.
Observe growth.

Where will creatures live?
Why?
Take hoop. Observe for 10 minutes. Bug catcher.
Identify – books.
Sort.

Collect litter.
Where was it found?
Why?
(! Safety) Decay. Investigation: which decays more quickly, apple / plastic bag / paper?

**SCHOOL
GROUNDS**

Build a house on sand, on rocks.
Pour on H₂O.
What happened?
Why?

After rain/sun.
Where are the puddles?
Trace, observe – evaporation.
Shadow tracing.

Is it easier to push a partner on a bike on grass, asphalt, tiles etc.?
Why?
Where will the ball bounce best?
Why is it dangerous in out of bounds areas?
Care of plants?

Listen for 3 mins.
What did you hear?
Why? (local area)
What would you hear inside the school?

Listening walk
What sounds can you hear?
(tape)

What can we smell?
What can we see?
(Seasons) colours.
What did it feel like?
e.g. bark, moss, grass,
playground.

Minibeast hunt
Find a minibeast and put in your
matchbox. (*carefully*)
What does it look like?
Where did you find it?
Where do you think it eats?
Are they the same?

Collect rubbish
Sort for materials.
Who do you think dropped it?
Where did it come from?
What do you think will happen
to it? **Bury it.**

**SCHOOL
GROUNDS**

What is growing?
How did they get there?
Do all plants have flowers?
What colours are they?
What will the plants be like
the next time you visit?

Pond dipping
What is living?
What is non-living?
What colour is the pond?
Are the plants the same?
What do the water creatures need
to survive?

Shadows
When do you have shadows?
Can you get away from your
shadow?
Does your shadow change?
Can you see yourself in the pond?

Birds
Can you see any birds?
What do they like to eat?
How do we scare the birds
away?
Scarecrow?

WALKABOUTS
Variety of focuses. Senses,
seasonal walk/ different times of
the day – change visits to the pond.
Sounds – different / same – sounds.
Indoors and outdoors.

LEAF MATCHING
e.g. dandelion leaves etc.
Textiles – bark/brick (rubblings).
Tree shake – need sheet to
spread on ground, stick to shake
branch (or upturned umbrella).

MINIBEASTS
Sorting, classifying.
Habitats and homes – game,
where you could place a bright
object to keep it safe and warm?

RUBBISH
Collect/sort.
Slopes – find/test ...
Water – puddles

**SCHOOL
GROUNDS**

SOIL
(with gloves ④)
Feel / look.
What is it made up of?
Animal life in soil

PLANT LIFE
Identification.
Planting seed/bulbs.
Changes through the seasons.

BOOKS
The Hungry Caterpillar.
Isn't it a Beautiful Meadow?
The Very Busy Spider etc.

COLOUR
Camouflage – does...fit
in/stand out? Wiggly worms
game – thread on bushes of
different colours for children to
search for and bring back.

Seasons/weather
Photographs/ postcards.
Weather chart.
Feed birds/don't feed birds.
Cold/hot (clothes?)

Light day/night
Shadows – movement of sun.
Nocturnal animals – tracks
(evidence), droppings.

Senses
Tape outdoor sounds. Atmosphere test,
look, listen, feel, smell. Blindfold trail.
Trails using our senses. Furs, feather,
hair, wings etc.
Feel. Why are they made the way they
are? Rubbings.

Colour
Colour matching – leaves, flowers etc.
Changing sky colour – paint mixing.
Camouflage.
Give out coloured squares (greens,
browns...) and ask children to find a
plant/leaf the same colour

**SCHOOL
GROUNDS**
“Un-nature trail”

Mini-beasts
Classification – magnetic white board.
Similarities and differences.
Nature trail collection and close
observation (results of observation –
painting).
Different environmental
conditions.

Classroom / Outdoor area
Garden centre / nursery
| |
Pots, money growth things
| |
Catalogues sell
\ Role play

Growth change
Life cycles – animals, plants.
Planting – watching growth
| |
Sorting Tadpoles
Apple tree – apple pies
Photographs – recording change

Habitats
Appropriate visits.
Building homes – nests, bird box, bat
box.
Wormery, ant farm, snail trails,
woodlice.
Underground – on ground, in the trees.

SCHOOL GROUNDS

Washing line

- washing/ drying dolls clothes
- where is the best place?
- Why is this?
- Weather etc.

Work with shadows

- is there one?
- What size is it
- Has it changed?
- Jump on a shadow
- Make a monster

Growing things from seed / small plants.

- Glass garden.
- needs of plant
 - caring of environment
 - personal interest

Colour from a distance

- 1 child in red
- 1 child in brown/green
- Notices/numbers
- Black on white/green on brown
- Which shows up best? Why?

Sounds in environment.

- A sound walk.
Can we make/reproduce the sounds.
Loud/soft, long/short, constant?

Build on the above

- camouflage
- animals/plants
- litter – does it show up
- colour in environment
- message e.g. red - DANGER

Collection of objects found in school grounds

- describe
- name materials/functions
- soft / group etc.
- explore

Pattern/shape in environment.

- Matching/sorting/grouping etc.
Also size of natural things
e.g. tree-daisy

OURSELVES

Display baby photos.
Then/now comparison

SEASONS TREES

Collect leaves, match to outline.
What happens to the leaves at
different times of the year?

CLOTHES

Make collection of clothes,
sorting for hot/cold weather
clothes.
Waterproof – compare /test
fabric samples

GROWTH

Bulbs => flowers
Seeds => plants/trees
Observing growth/change
Label parts of plant if
appropriate

Book Title

*“You’ll soon grown into them
Titch”*
Pat Hutchins

BIRDS LIFE CYCLE

Farm visit – looking at growth /
change.

PAIRS

Shoes, gloves, socks.
Matching, ordering.

BABY Bring one in!!

Baby’s needs – food, drink,
sleep.
Weigh baby.

COMPARISON

Children in class order by size,
colour of hair / eyes etc....
Use mirrors to compare features,
similarities, differences.
**! Be careful of children’s
feelings.**

GROWTH
Will your seed grow as fast and tall as jack's?

GIANT'S VOICE
Make voice louder or softer etc.

SMELL
What has the giant got for dinner tonight?
What do you like to smell?

GAMES
What is easiest to steal away from a sleeping giant?
Creeping up to blind-folded child to remove item e.g. musical instrument

JACK AND THE BEANSTALK

SOUND
Can you create a sound like giant footsteps, Jack's footsteps?

MATERIALS
Coins: Plastic/cardboard/real
Sort/handle(mass)/ feel

TASTE
What has the giant got for dinner tonight?
Which tastes do you like best?

SORTING
Selection of beans for sorting.
Children's own criteria.

How does water change when it is heated/cooled?
What happens when bubbles, colours, soap, sand is added?

Which material/cloth is best for soaking up water?

What happens to soap when you leave it in water?
Sort soaps colour/shape.

Sorting clothes, matching pairs, ordering/recording sizes.

“Time to get out of the bath Shirley”

Bath toys.
Float or sink?
Sorting for movement (push, blow, wind up)

Making boats to carry a doll.

Can you make water move uphill?

Weight, body parts
How do we keep safe in the bathroom?
- water temperature
- slippery surfaces
- cleaning materials

Why do we bath?
Does the water need to be hot?
Do we need soap? Shampoo?

Who can blow the biggest bubble?

Explore balloons – feel sound, change, shape, transparency, gravity, static electricity.
What is inside?

Sorting balloons – size, colour shape etc.

Why do balloons/bubbles burst?

The Blue Balloon

Can you use a balloon to make something move?

What makes a balloon fly?

How many different sounds can your balloon make?

Can you make it go faster / further?



TOUCH

Feel spider's web in book. Feeling different threads, looking at threads through magnifying glass, look at texture e.g. cotton, string, wool, silk.
Feely box for matching.

Where does a spider live?
Where would you see a spider's web?
How is it made? Where does it come from?
What does a spider eat? How many legs does a spider have?
Where do baby spiders come from?

How many legs do other creatures have?
Can you find any with eight legs?
Compare with insects.
Do all spiders look alike?
Compare size, colour, texture.
Compare coats.

NIGHT/DAY

Where is the sun in the morning/ afternoon?
Where's the rest of the sun?
Where is the sun at night?

The Very Busy Spider Eric Carle

Patterns

What kind of a pattern does a spider make?
Where might you see another spiral pattern?

SOUNDS

What sounds do different animals make?
With voices/feet.

Compare food and habitats

Have you seen a spider?
Can you find a spider?
At school
At home
(!Be careful with living creatures)

Wash different fabrics.
Hang out to dry.
Which dry quickly/first?
(speed)

Make a weather vane
(plastic cups)
Directions of mind.
Strength of mind.
(Anemometer)

Stains.
To remove.
Washing with:
1. hot/cold water
2. soap/no soap

Soaking up water.
Weight clothes first.
Soak in water.
Weigh again.
How heavy are the fabrics?

**“Mrs Mopple’s
washing line”**

Height of washing line.
High/low.
Shade/sunlight.

Different ways of hanging out
clothes.
1 peg/ 2 pegs.
Bunched/separately.

Different types of pegs.
Dolly pegs
Wooden pegs
Plastic pegs
No pegs
(could use table fan under supervision)

What sort of line is
strongest/best?
Wool, string, cotton, plastic.

CAFE

NOAH'S ARK

JUNGLE

HOSPITAL

**Alternative ideas for
the
"Home Corner"**

UNDERWATER CAVE

WASH ROOM

BABY CLINIC

CASTLE

SOUNDS
e.g. rattles, whistles etc.

VISIT TO MARWELL ZOO
Nursery trail. Eat? Live?
Smell? Sounds?

SORTING
Size
Patterns
Classification

RIVER
Floating and sinking

JUNGLE

CLOTHING
Suitable for jungle

CAMOUFLAGE
Can you hide your animal in our
jungle?

BOOKS
Dear Zoo
Zoo
Polar Bear, Polar Bear

GRASSES
Are all grasses the same?
Look in our school
grounds.....

Selection of shakers
Choose the best for the baby.
Too loud, too soft, too big etc.

3 different size “babies”
Can you dress the babies?

Make a bottle for baby
Mix formula => progress to other
things which dissolve/don't.
What can we try.

Keep baby's bottle warm
Selection of fabric, foil, paper.

BABY CLINIC
3 “BABIES” (DOLLS)

Investigation kit
Ruler, scales, tape measure,
magnifying glass, magnet.

Box of toys
Which ones are suitable for
baby to play with?
How do they work?

Tasting baby foods
Sweet, savoury.
Match labels to taste.
½ lollystick for tasting or piece
of bread stick.

Selection of food/packets
Suitable, not suitable.
Sort.
Can we make them suitable?
e.g. banana

ELECTRICITY
Work equipment and safety.
Make a buzzer to attract assistance.

TASTING
Sweet/savoury.
Sour/sweet.
Make packets of appropriate sources.

BREAD
Making. Raising agents, biscuits etc. Measuring.
Make and test oven gloves.

SANDWICH MAKING
Type of bread.
Healthy diet, choice of fillings.
Menu of foods.
Introduce fair test.

CAFÉ
Sorting utensils by materials

CHANGES
Melting jelly, chocolate.
Dissolving tea/coffee.
Things that will.
Things that won't.

HYGIENE
Why do you have to wash your hands?
Keeping surfaces and equipment clean. Wearing an apron.

SOUNDS
What item (e.g. bell, buzzer, rattle, whistle, voice), would best attract waiter?

WASTE
Refuse, rottable. (! **SAFETY**)
Shelf life of goods.
Mould/stale.

PROPERTIES OF WAX
Waxing paper.
Waterproofness.
Comparing paper.

SHELLS
Sorting – texture, shape,
colour, patterns – magnifier.
Music with shells.

MAGNETS
Magnetic fishing.
Fish shapes on magnets.
Treasure in sand.

SHINY THINGS
Sorting treasure
Materials
Touch, reflecting light
Coloured goggles

**UNDERWATER
CAVE**

SEA CREATURE SNAP
Salt/plain water.
Buoyancy.
Make a life jacket for a toy
figure – cork/rubber band.

WALKING IN FLIPPERS
Different sizes – shoes etc.

BUBBLES
Different shaped blowers.
Best bubble mixture.

WET SAND
Making prints – matching the
objects

Dog/cat biscuits.
Sorting. What happens when
you put the biscuits in water?
Match correct animal to food.
Can you drink water/eat biscuits
without using hands?

Design transportation to and
from vets

Fur, feathers, scales, skin.
Look at colour, describe.
Feely bag.

Pet toys.
Wheels, ladders, squeaky toys,
squashy, bells, balls, clockwork
mice.
Match toy to pet.

VETS SURGERY

Movement. Jump, fly, walk/run.
Footprints – match to animal.
Number of legs. Put mitten or
hair band round hand/fingers –
can you pick up a pen?
What can you pick up?

If animal stays overnight which
material makes the warmest
blanket?
Animal snap

Birdseed has got mixed up.
Sort seeds for budgie
(using sieves)

Animal sounds.
Use tapes or children make own
sounds.
Loud and soft noises.
Use masks in the vets.

