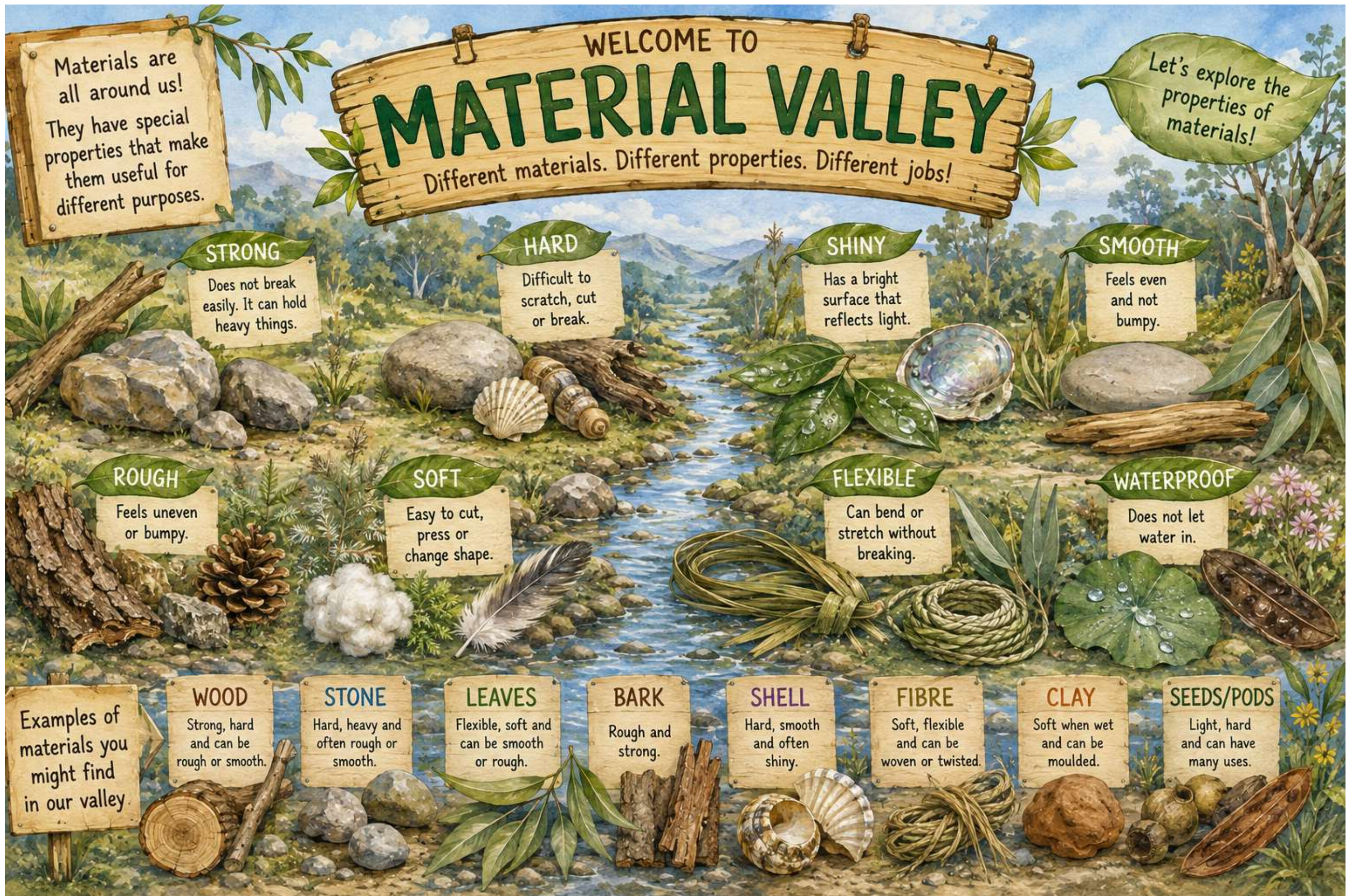
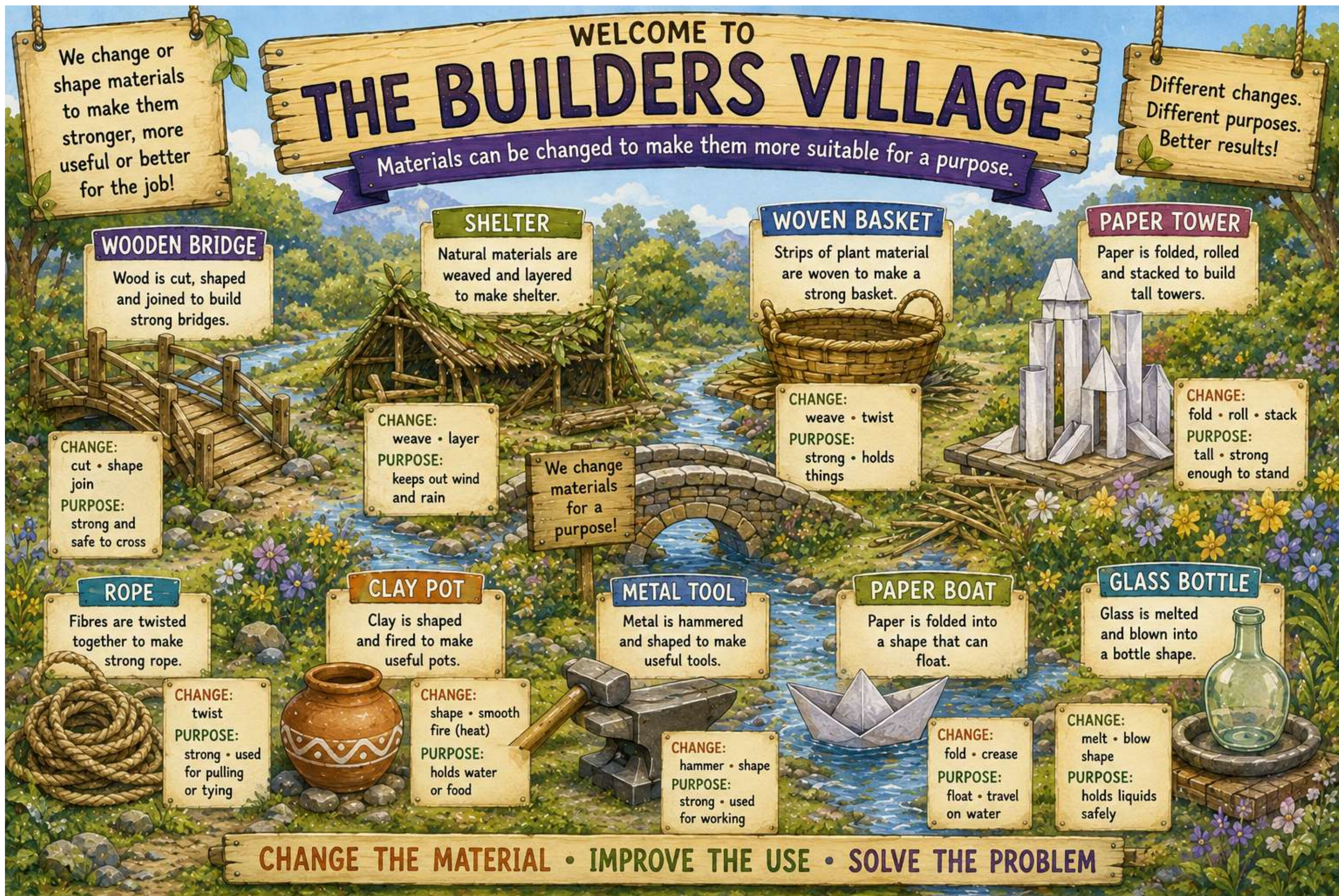








We change or shape materials to make them stronger, more useful or better for the job!

WELCOME TO THE BUILDERS VILLAGE

Materials can be changed to make them more suitable for a purpose.

Different changes.
Different purposes.
Better results!

WOODEN BRIDGE

Wood is cut, shaped and joined to build strong bridges.

CHANGE:
cut • shape
join
PURPOSE:
strong and
safe to cross

SHELTER

Natural materials are weaved and layered to make shelter.

CHANGE:
weave • layer
PURPOSE:
keeps out wind
and rain

WOVEN BASKET

Strips of plant material are woven to make a strong basket.

CHANGE:
weave • twist
PURPOSE:
strong • holds
things

PAPER TOWER

Paper is folded, rolled and stacked to build tall towers.

CHANGE:
fold • roll • stack
PURPOSE:
tall • strong
enough to stand

ROPE

Fibres are twisted together to make strong rope.

CHANGE:
twist
PURPOSE:
strong • used
for pulling
or tying

CLAY POT

Clay is shaped and fired to make useful pots.

CHANGE:
shape • smooth
fire (heat)
PURPOSE:
holds water
or food

METAL TOOL

Metal is hammered and shaped to make useful tools.

CHANGE:
hammer • shape
PURPOSE:
strong • used
for working

PAPER BOAT

Paper is folded into a shape that can float.

CHANGE:
fold • crease
PURPOSE:
float • travel
on water

GLASS BOTTLE

Glass is melted and blown into a bottle shape.

CHANGE:
melt • blow
shape
PURPOSE:
holds liquids
safely

CHANGE THE MATERIAL • IMPROVE THE USE • SOLVE THE PROBLEM

WISDOM OF THE FOREST ELDERS

Aboriginal and Torres Strait Islander Peoples change natural materials for useful purposes.

Weaving, twisting, shaping and joining natural materials makes them useful.

For thousands of years, people have used what the land provides in clever and respectful ways.

Nature provides. People learn, create and care for Country.

WEAVING

Strips of plants are woven over and under.



Makes strong mats, baskets and containers.

TWISTING

Strands are twisted together.



Makes strong rope, cord and handles.

PLAITING

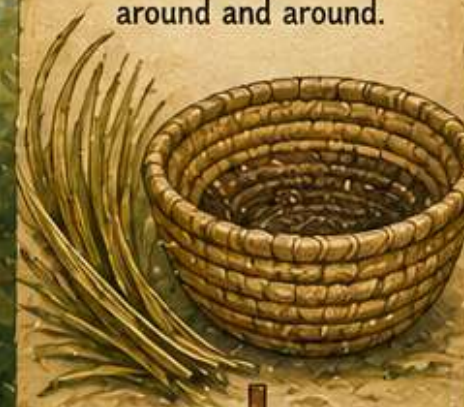
Strips are plaited or braided together.



Makes bags, nets and belts.

COILING

Long strips are coiled around and around.



Makes bowls, baskets and coolamons.

CARVING & SHAPING

Wood and stone are carved or shaped.



Makes tools, dishes and fine instruments.

These skills are passed down through stories, practice, observation and respect for Country.

THE WISDOM TEACHES US TO:



Use what is available.



Respect natural materials.



Create with care and purpose.



Share knowledge and skills.



Look after Country.

Different materials. Different techniques. Useful and meaningful things for everyday life.

LEARN FROM THE PAST • RESPECT THE PRESENT • CARE FOR THE FUTURE

THE SCIENTIST'S CHALLENGE

Scientists plan safe and fair investigations.

Scientists ask questions, make predictions and investigate to find answers!

We change **ONE** thing and keep other important things the **SAME**. That makes it **FAIR**!

PLAN IT

- ✓ Ask a question.
- ✓ Make a prediction.
- ✓ Choose what will change.
- ✓ Decide what will stay the same.
- ✓ Plan the steps.
- ✓ Check for safety.

MAKE IT FAIR

Keep these the **SAME**:

- Materials
- Size
- Amount
- Time
- Place
- Method
- Measuring tool

INVESTIGATE SAFELY

- ✓ Follow the steps.
- ✓ Use equipment carefully.
- ✓ Keep the area tidy.
- ✓ Ask for help if needed.
- ✓ Look out for others.

OBSERVE & MEASURE

- ✓ Make careful observations.
- ✓ Use tools to measure.
- ✓ Record your results.

ANALYSE & CONCLUDE

- ✓ Look for patterns.
- ✓ Compare results.
- ✓ Was your prediction correct? Why?
- ✓ Draw a conclusion.
- ✓ Think of ways to improve!

RESULTS

Test	Result
1	
2	
3	
2	

OUR RESULTS



OUR INVESTIGATION CHECKLIST



Ask a question



Predict



Plan



Make it fair



Work safely



Observe & measure



Analyse



Conclude



Share & reflect

Great scientists are curious, careful and thoughtful. They use evidence to understand the world around them!

WELCOME TO THE BRIDGE TRIALS

Investigate which physical change makes paper strongest.

We change the shape of the paper and keep other important things the **SAME**.

We test carefully, measure results and use evidence to find out!

FLAT

FOLDED BEAM

ROLLED

CONCERTINA (ZIGZAG)

Which bridge will hold the most weight?

REMEMBER

CHANGE:
paper design

KEEP THE SAME:

- ✓ Same paper
- ✓ Same size
- ✓ Same gap
- ✓ Same supports
- ✓ Same weights
- ✓ Same method

HOW WE TEST

1

Place the bridge across the supports.



2

Add one linking cube at a time.



3

Count carefully.



4

Stop when the bridge collapses.



5

Record your result.



6

Repeat for each design.



WORK SAFELY

- ✓ Keep our area tidy.
- ✓ Add cubes carefully.
- ✓ Follow the steps.
- ✓ Use materials correctly.
- ✓ Tell the teacher if something becomes unsafe.

WE OBSERVE...

- How many cubes did each bridge hold?
- Which bridge was strongest?
- What patterns do we see?

OUR RESULTS

BRIDGE DESIGN	CUBES HELD	QUICK OBSERVATION
FLAT		
FOLDED BEAM		
ROLLED		
CONCERTINA (ZIGZAG)		

WE CONCLUDE...

- Which design made the strongest bridge?
- How did changing the shape change the strength of the paper?
- What did we learn?

PREDICT • INVESTIGATE • OBSERVE • MEASURE • COMPARE • CONCLUDE

THE BRIDGE OF HOME

Explain our scientific thinking.

We asked questions,
made predictions,
investigated,
observed, measured
and concluded.

That's how
scientists think!

We used evidence
to explain what
we found out and
how we changed
the materials.

That is our
scientific thinking!

1. ASK



We asked a
question.

2. PREDICT



We made a
prediction.

3. PLAN



We planned a
safe and fair
investigation.

4. INVESTIGATE



We carried out
our investigation.

5. OBSERVE
& MEASURE



We observed
carefully and
took measurements.

6. ANALYSE



We looked for
patterns and
compared results.

7. CONCLUDE



We answered our
question and
explained what
we learned.

WHAT DID WE LEARN?

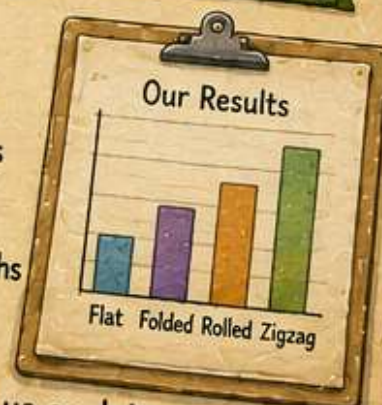
- Materials can be changed.
- Physical changes do not make new materials.
- Different changes give different results.
- We can make things better by thinking like scientists!

We changed materials
for a purpose and
found out which
change made paper
strongest!

OUR EVIDENCE

We used:

- observations
- measurements
- comparisons
- tables and graphs
- fair testing



This helped us explain
our thinking.

OUR SCIENTIFIC THINKING HELPS US...



UNDERSTAND
THE WORLD



SOLVE
PROBLEMS



MAKE BETTER
CHOICES



CARE FOR
OUR EARTH



CREATE A BETTER
FUTURE

We are curious. We are careful. We think like scientists!
THIS IS OUR BRIDGE OF HOME.