

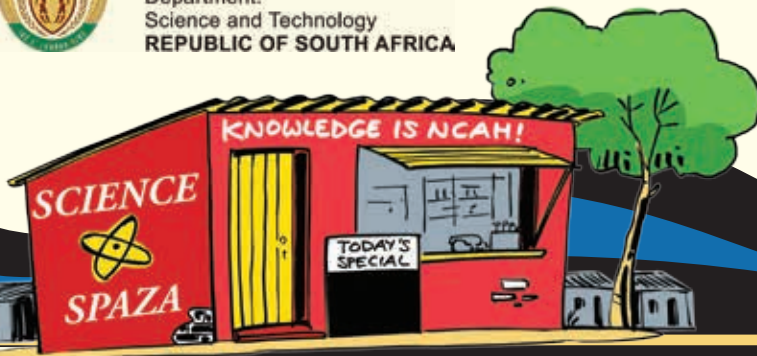


science & technology

Department: Science and Technology  
REPUBLIC OF SOUTH AFRICA



Knowledge is Ncah!



## Invention

THIS AWESOME STRATEGY INVOLVES THE FOLLOWING STEPS:

HAVE YOU EVER WONDERED HOW PEOPLE INVENT THINGS? YOU CAN – USING THE INNOVATION PROCESS.

Think  
(What's the problem?)



Explore  
(What info do I need?)



Design  
(What will it look like?)



Share  
(Who can help me?)



Evaluate  
(How can I make it better?)



Make  
(How will I build it?)

Try  
(Does it work?)



### APPLY THIS PROCESS

SOUTH AFRICANS USED OVER 100 000 TONNES OF PLASTIC BOTTLES LAST YEAR. THIS IS NOT COOL FOR THE ENVIRONMENT! LET'S INVENT A NEW USE FOR PLASTIC BOTTLES!

### WHAT YOU WILL NEED:

Paper, pencil, a few empty plastic bottles, your imagination!



## What to do:

- 1 THINK:** We have a problem! Is there a new way to re-use these plastic bottles? Let's explore!
- 2 EXPLORE:** Examine your bottles and note the design characteristics (strength, size, colour, shape, etc.). This might help you think of a few ideas.
- 3 DESIGN:** Write about and draw a sketch of 3 ideas. Do this even for the ideas you think are silly. Sometimes silly ideas turn into brilliant ideas!!! And don't worry about your drawing skills either – it's about the idea, not the drawing!
- 4 SHARE:** Chat about your ideas and try to help each other improve them.
- 5 MAKE:** Make your invention. Get friends to help!
- 6 TRY:** ... and try it out!
- 7 EVALUATE:** Is it working? What could you do differently? Often the cycle starts again – to reach an even better solution.

## CAREERS

SO MANY CAREERS USE INNOVATION AND INVENTION! HERE ARE A FEW: ENGINEERS, CONSERVATIONISTS, PHYSICISTS, COMPUTER SCIENTISTS AND MEDICAL RESEARCHERS.



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and Technology Advancement

## SOUTH AFRICANS LEAD THE WAY!

Do you know what CT scans, Creepy Kraulies, Prartley Putty, cybertrackers and cricket speedguns all have in common? **They were all invented by South Africans!**

Coal-burning power plants make millions of tons of waste in the form of ash. In 2008, **Dr Mulalo Doyoyo** found a use for this waste! He mixed it with organic chemicals, and invented a structural material called CENOCELL™. It's strong but light, with good insulating properties and fire resistance. This means it could replace concrete, wood and



other materials, in construction, transportation and even aerospace!

We know that waste disposal is a huge challenge in the world today, so inventing new ways to recycle waste is essential.



WAY TO GO,  
DR DOYOYO!

## CURRICULUM LINKS:

- Knowledge area:** Matter and Materials. Environmental Studies
- Core Concepts:** Properties of materials, Human impact on environment, Design Process skills



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