

# SCIENCE SPAZA

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**UKUNAMBITHEKA KWANGESIKHATHI ESIDLULE!  
UKUDLA OKWAKUDLIWA ABANTU BASENDULO**



LE NYAMA IMNANDI! NGIZIZWA NJENGOMUNTU ONGOKOQOBO WASENDULO!

UQINISILE, ABANTU BASENDULO BABEDLA INYAMA, KODWA BABEDLA NEZITHELO NEMIFINO EMININGI.



NGEMPELA?

YEBO, UKUTHI NJE KUNZIMA UKUTHOLA IZINSALELA ZEZITSHALO ZASENDULO EZINDAWENI OKWUBUKULWA KUZO NGENXA YOKUTHI ZIBOLA KAKULA KUNAMATHAMBO EZILWANE NAMAZINYO.



HHAYI BO, BENGINGAKWAZI LOKHO. KUNGCONO NAMI NGIVELE NGIDLE LE MIFINO.

## UKUBHEKA EMUVA

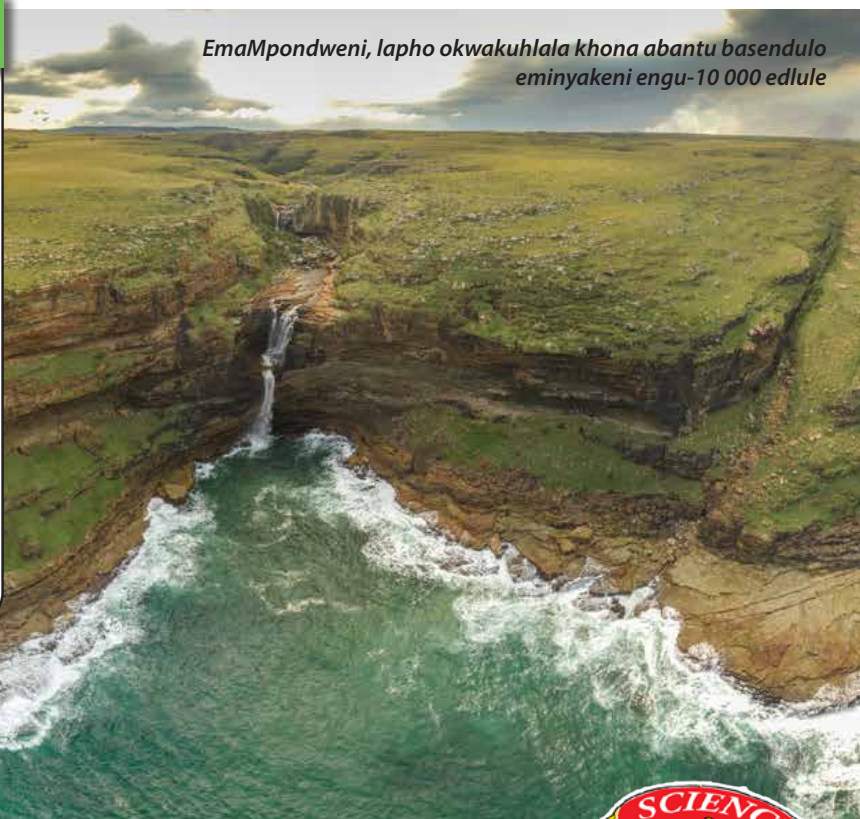
LIKUVUBUKULA KUWUKUCWANINGA ABANTU BASENDULO NGOKUHLOLA UBUFAKAZI ABABUSHIYA NGEMUVA. ABANTU BASENDULO BABEDLA IZILWANE KANYE NEZITSHALO NGENDLELA NATHI ESENZA NAMUHLA.

ABAVUBUKULI BATHOLE IZINHLOBO EZININGI ZEZITSHALO EZIDLWAYO EZINDAWENI OKWAKUHLALA KUZO ABANTU BASENDULO.

ISIFUNDA SASEMAMPONDWENI ESIGUDLE UGU OLUSEMPUMALANGA YENINGIMU AFRIKA SIYIKHAYA LEZITSHALO EZININGI KANYE NEZIMBALI. EZININGI ZALEZI ZITSHALO ZIYADLIWA FUTHI ZISASETSHENZISWA AMAMPONDO KANYE NABANYE ABANTU KUZE KUBE NAMUHLA.



*EmaMpondweni, lapho okwakuhlala khona abantu basendulo eminyakeni engu-10 000 edule*



Knowledge is Ncah!





## UKUZINGELA IMBEWU!

Izimbewu ziyinxenye eqinile (okusahlamvu) yezitshalo ezivumela ukuba zikhiqize izitshalo ezintsha. Izimbewu zembuzwe *yisikhumba sembewu* esiqinile esivikela isitshalo esincanyana esingaphakathi esibizwa ngokuthi *yi-embryo*.



### UZODINGA:

- ISHOFOLO ELINCANE, UKHEZO NOMA ISITSHA SOKUKHA INHLABATHI
- ISIHLUZI SASEKHISHINI, ISISEFO NOMA INETHA
- AMANZI
- ISITSHA SOKUQOQA IZIMBEWU
- INCWAJANA NEPENI

**1** KHETHA INDAWO EPHEPHILE OKUKHULA KUYO IZIHLAHLA NEZITSHALO EDUZE KWASEKHAYA NOMA ESIKOLENI OZOTHUNGATHA KUYO.

**2** YIKHA INHLABATHI BESE UYITHELA ESISEFWENI, ESIHLUZINI NOMA KWINETHA YETIYE. THELA AMANZI PHEZU KWENHLABATHI UKUZE USEFE INHLABATHI.

**3** FUNA NOMA YIZIPHI IZIMBEWU EZISALAYO.



**4** PHINDA LE NQUBO NGENHLABATHI OYITHATHA EZINDAWENI EZIHLUKAHLUKENE KUZE KUBE YILAPHO LITHOLA IZIMBEWU.

**5** CHAZA UKUBUMBeka NOMBALA WEMBEWU NGAYINYE. BHALA PHANSI INDLELA ISIHLAHLA OKUVELE KUSO IMBEWU ESIBUKEKA NGAYO UMA UKWAZI UKUSIBONA.

## ABAVUBUKULI BAFUNA IZIMBEWU ZASENDULO

Ngendlela efana nale owenze ngayo, abavubukuli nabo baqoqa, bageze futhi basefe inhlabathi ukuze bafune izimbewu kanye nezinsalela zezitshalo emigedeni kanye nasezindaweni okuvubukulwa kuzo.



ukugeza nokuhlunga inhlabathi wasendulo



Ukucinga imbewu yasendulo

UbuFakazi basendulo bezitshalo ngokuvamile kunzima ukubuthola ngoba buye badliwa noma babola ngokuhamba kwesikhathi. Ngezinye izikhathi, izinsalela zezitshalo ziyalondolozeka kuye ngesimo sendawo noma inhlabathi, njengasezindaweni ezihlale zimanzi noma ezome kakhulu.

Kodwa izimbewu eziningi zilondolozeka ezindaweni okuvubukulwa kuzo ngoba ziye zasha, lokhu kusho ukuthi izimbewu ziye zasha zaba mnyama njengelahle.

Abavubukuli bafunda ngokudla okwakudliwa abantu basendulo ezinsaleleni ezishile.





## OKUTHALAKALA ENHLABATHINI YASEKHAYA

E-Waterfall Bluff rock shelter  
esemaMpondweni eMpumalanga Koloni  
abavubukuli be-P5 Project bathola izimbewu  
ezilondolozekile.

Lezi zimbewu zabasiza bakha kabusha  
lokho okwakudliwa abantu basendulo lapha  
eminyakeni engaphezu kwengu-10 000 edlule.



### IMISEBENZI: YENZA UMLANDO IKUSASA LAKHO!



#### UTatenda Tavingeyi

ungumvubukuli kanye nomphathi  
welebhu e-P5 project oye wasiza  
ekuhlaziyeni izimbewu zasendulo  
ezivela endaweni yasemaMpondweni  
ese-Waterfall Bluff.

Ukuvubukula kukunikeza amathuba  
ajabulisayo omsebenzi anjengalana:

- Abacwaningi
- Abaphathi belebhu
- Abanakekeli bemyuziyamu

### UKUXHUMANISA IKHARIKHULAMU

• *Amakhono Empilo Ibanga loku-1  
kuya kwelesi-3*  
Izitshalo nezimbewu

• *Isayensi Yezehlalakahle  
Ibanga lesi-5 kuya kwelesi-6*  
Isihloko: Abalimi bokuqala eningizimu  
AFrika kubhekiselwa kubazingeli  
nabaqoqi

• *Isayensi Yemvelo Ibanga lesi-7  
kuya kwelesi-9*  
Izimbewu – isitho sokuzala  
sezitshalo

Knowledge is Ncah!





## VIVINYA ULWAZI LWAKHO

**UMYALELO: BHEKA LEZI ZINKOMBA BESE  
UQAGELA IZIMPENDULO UKUZE UHLOLE  
ULWAZI LWAKHO LWEMIVUBUKULO!**

1. Igama elichaza ukudla okudliwa ngumuntu  
\_\_\_\_\_
2. Ucwango lwabantu basemandulo endulo  
ngokubheka ubufakazi ababushiya ngemuva  
\_\_\_\_\_
3. Ingxenye yesitshalo engaveza isitshalo esisha  
\_\_\_\_\_
4. Uma izinto zezitshalo zingaboli, abavubukuli  
bathi imbewu ibi ...  
\_\_\_\_\_
5. Enye indlela engaba yimisebenzi ka-  
archaeologist ukuba ... kwilebhu  
\_\_\_\_\_



(izimpendulo: 1. Isidlo; 2. Ukwubukuli; 3. Imbewu; 4. Ibilondolozekile / ilondolozekile; 5. Umphathi (welebhu/ kwilebhu))

## QALA I-SCIENCE SPAZA YAKHO

**Ingabe uyafuna ukuqala i-clubhu  
yesayensi esikoleni sakho? Skena  
ikhodi ye-QR ukuze ubhalise  
i-Science Spaza Club yakho  
MAHHALA ku-inthanethi.**

Vakashela kokuthi [www.sciencespaza.org](http://www.sciencespaza.org),  
sithumele i-imeyili [info@sciencespaza.org](mailto:info@sciencespaza.org),  
i-SMS noma i-WhatsApp kule nombolo  
076 173 7130 noma usibhalele kuleli kheli  
PO Box 22106, Mayor's Walk, 3208.



## SIFUNA UKUZWA KUWE!

SINGATHANDA UKUBONA UKUTHI  
ZINGAKI IZIMBEWU ONGAKWAZI  
UKUZIQQQA ENDAWENI OKUYO!  
SITHUMELE IZITHOMBE KULE  
NOMBOLO  
**076 173 7130**



P5 project iyinhlanguanisa yabacwaningi bemikhakha ehluahlukene  
ababambisene ekucwaningeni ukujwayela kwabantu ukuhlala ezindaweni  
eziseduze nogu. Imininingwane eyengeziwe nge-P5 project ingatholwa lapha  
<https://p5project.org>, ku-Facebook lapha <https://www.facebook.com/pfiveproject/>,  
ku-Twitter lapha <https://twitter.com/p5project> kanye naku-YouTube.

