

HSA Bicycle Tool KIT



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Client: JSI
Project: SC4CCM
Collaborators: Frank Elias Africycle LAB assistant



HSA Bicycle Tool KIT

Bag Evolution



Final Price (retail): 15 (USD) + VAT (16.5%)
Cost of goods total: 10.24 (USD)
Profit %: 46%

Africycle Malawi is a social business, %10 of net profits go to local CBO's, to help start income generating activities.



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Bag Prototype #1

Tool roll with pockets

Pros

- Uses .5 m of fabric
- organizes tools
- flap provides work surface

Thicker fabric?

Open



Rolled/Closed



String holds roll closed + prevents tools from rattling



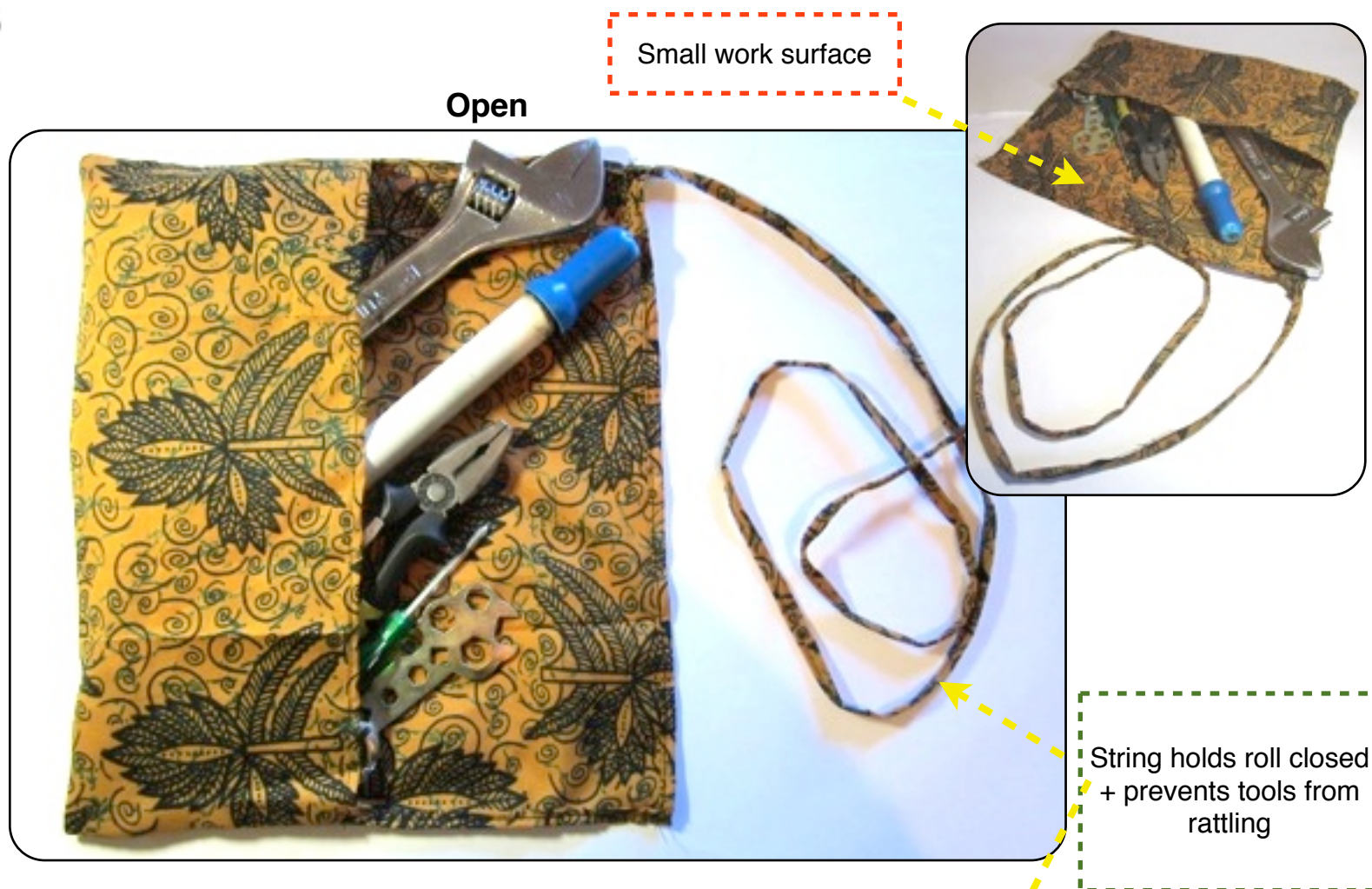
Possible for small tools to fall out sides



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Bag Prototype #2

pocket with flap



- Uses .25 m of fabric
- flap provides work surface

Single String, ties on to its self

Small Flap only wraps around pocket 1 full time

Rolled/Closed





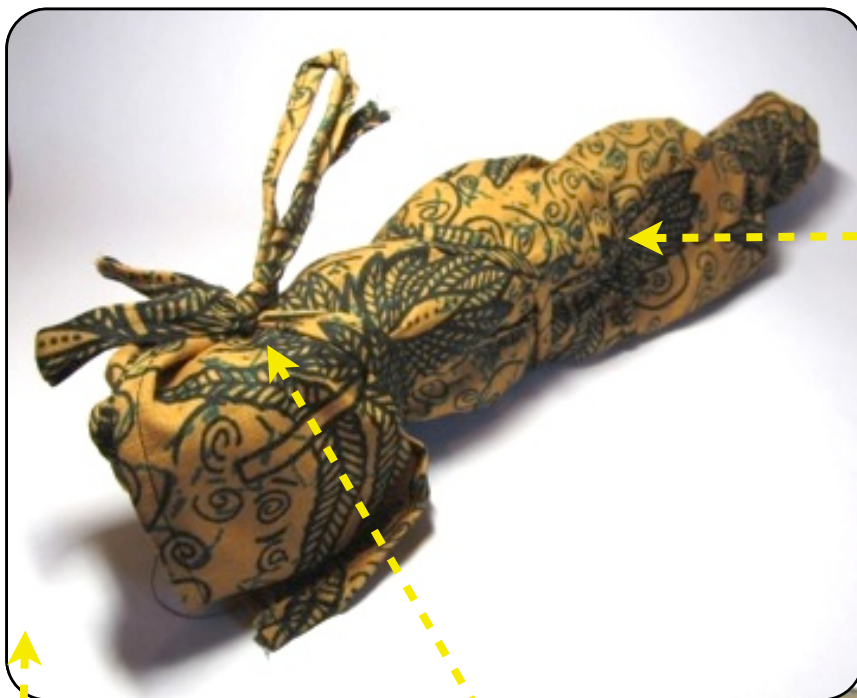
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FINAL Bag Prototype #3

Pocket with Large Flap

Pros

- Uses .5 m of fabric
- flap provides work surface



String holds roll closed
+ prevents tools from rattling

Large work surface

Small Flap wraps
around pocket 2 full
times, adding strength
and life to bag

2 strings tie together





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Hammer Prototype 1

Pros

- Saves Weight
- Saves money
- Compact



Cons

- adds production time
- adding hammer/wrench adds ~300 MWK
- adding standard hammer adds ~500 MWK
- adds complexity to training Material design



We have chosen to **not** include a hammer and hammer/wrench in the HSA Tool Kit



HSA Bicycle Tool KIT

Tools

Plier
Spoke Key
Steel nail X2
Shifting spanner
Hule spanner
2nd hule (tire leaver)
Pump
Rubber glue & Rubbe
Screw driver X 1
Bag (patch kit)
Bag (Tool bag)





HSA Bicycle Tool KIT

Design Method

Briefing

Identifying the problem
Briefing the solution
User profile
Define considerations
Define constraints



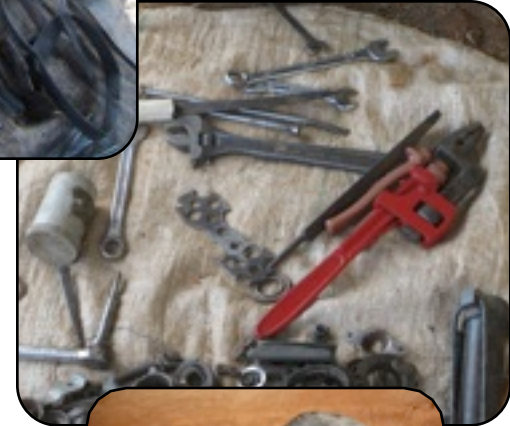
User Research

Questionnaires + Observation
What tools do you use to fix your bicycle
What do you wish you knew about bicycle repair



Local Product Sourcing

Purchase prototype tools
fabricate Prototype tools
acquire whole sale pricing



manufacturing tests (bag)

scoping skills + prices of local fabricators



Final Pricing + Refine what tools should be in KIT

add and subtract needed/unneeded tools



Presentation



HSA Bicycle Tool KIT

Design Brief

Bicycle Repair Kit

Design Brief:

Designing a bicycle maintenance and repair Kit, to be used in rural Malawi. This Kit will be used by Ruraly based HSAs and general public.

User Profile:

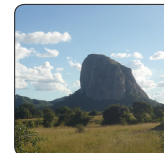
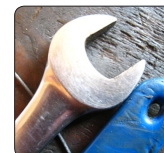
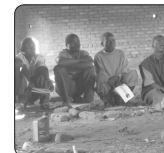
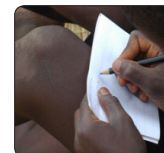
Cyclists all over the world at some point in time need Bicycle repair or maintenance. Bicycle repair services are widely available throughout rural Malawi, tho is often improvised and repairs are short lived. Tools, materials and knowledge are vital for Bicycle self repair and maintenance.

Constraints:

- Appropriate for the bicycle in the region
- Able to preform ALL basic maintenance
- Able to repair a bicycle out of a crisis situation
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Considerations:

- Simple to use
- Able to carry whilst riding a bicycle
- To work with training curriculum
- Locally Malawi made/sourced
- Price 10 - 15 USD
- Works well with repair manual
- Integrated part of the training
- Use similar materials as the Health care worker carrying kit
- Fit inside the health care worker carrying kit



Africycle LAB is the Research & Development wing of Africycle (www.africycle.org). It researches methods of genuinely assisting people through the improvement and distribution of non motorized transport (NMT) products within the many contexts of Africa. By analysing the bicycle relief sector, observing local NMT users and markets, and through consulting the gurus in the game and the people on the ground we ensure that Africycle products and services have informed integrity.

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BICYCLES DO MAKE A DIFFERENCE