

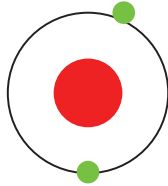
INFOGRAPHICS

The infographics will be used in the published book as an way to explain what the characters represent.



Lili

=

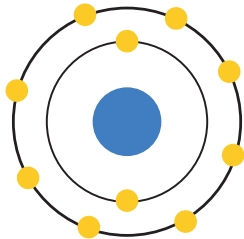


Lithium

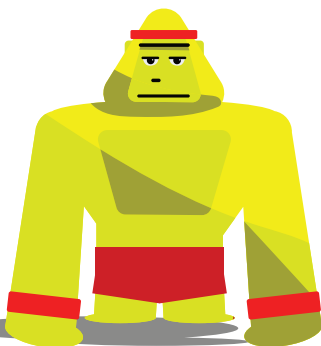


Nana

=

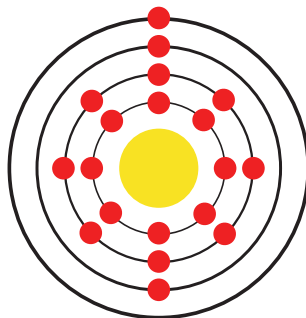


Sodium



Kiki

=

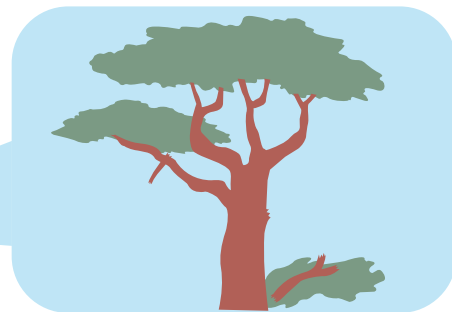
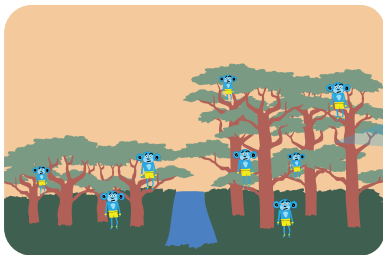
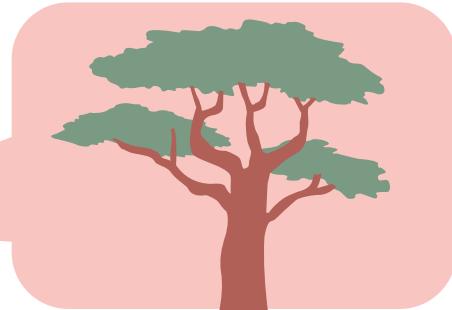
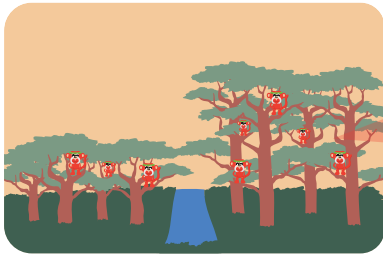


Potassium



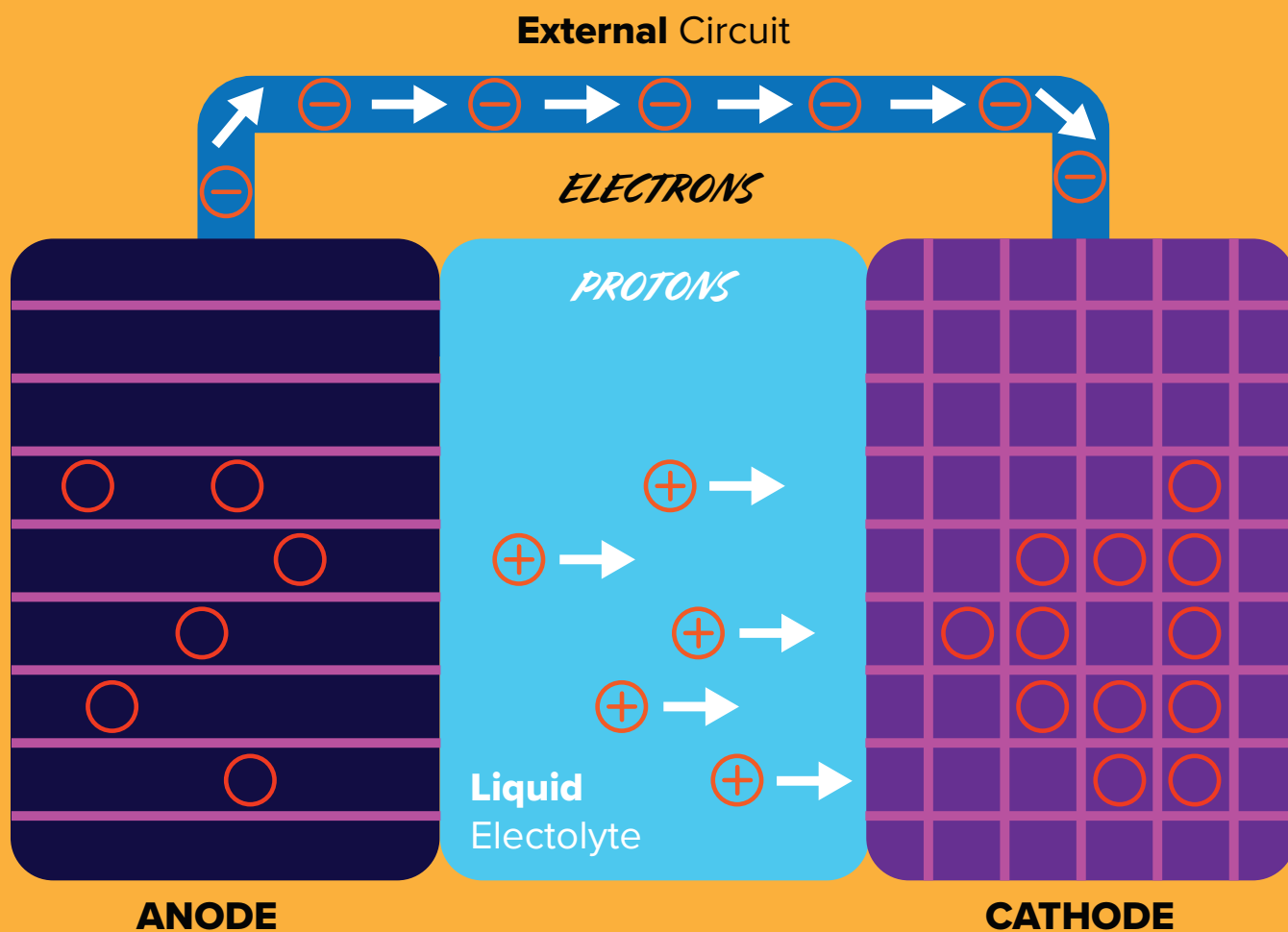


+ -



Na-ion & K-ion Batteries

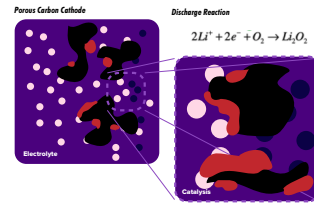
Replacing Li with more abundant Sodium (Na) or Potassium (K) can reduce cost of batteries for stationary applications. Na-ion and K-ion batteries requires new material chemistries because they are larger and heavier compared to Li ions.



RESEARCH

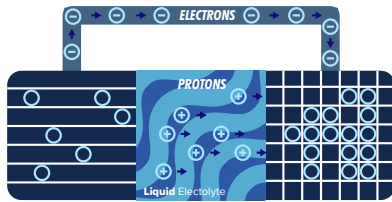
Li-Oxygen Batteries

Lithium Oxygen batteries have higher theoretical capacity compared to Li-ion batteries. However, irreversible parasitic reactions and poor understanding of surface chemistries prevents reaching its theoretical capacities.



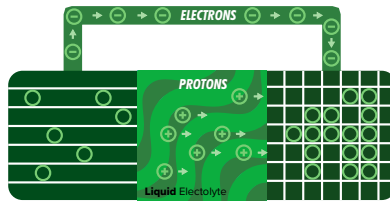
Li-ion Batteries

Lithium (Li)-ion batteries dominates the current landscape of energy storage for portable electronics. However, more demanding applications such as electrical vehicles requires fast charging of Li-ion batteries, which causes performance loss.



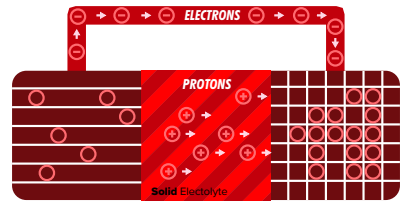
Na-ion & K-ion Batteries

Replacing Li with more abundant Sodium (Na) or Potassium (K) can reduce cost of batteries for stationary applications. Na-ion and K-ion batteries requires new material chemistries because they are larger and heavier compared to Li ions.



Solid Electrolytes

Replacing organic liquid electrolytes in Li-ion batteries with solid electrolytes can prevent batteries catching fire and allow new battery chemistries. However, interfacial instabilities between electrolyte - electrode is the bottleneck of solid electrolytes.



CHARACTER TURNAROUNDS

This is an example of a character turnaround, a reference for future designers working on the project when illustrating scenes with the character's we designed.



FUTURE ILLUSTRATION PLANS




hello / My name is Lili!



(1)

I like swimming, climbing and play in basketball.

show him swimming, climbing and with basketball ball.






make the ball yellow color with ↓ on it.

(2)

Do you know where I live?
Did you ever see Li-ion batteries?

→ This is the world of Li-ion batteries



(3)

Let me show you my battery world!

this is my home I call it anode. It's made of pencils

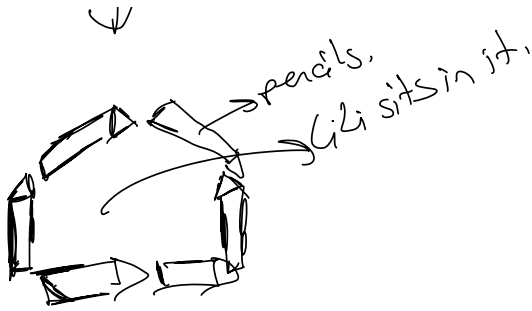


(4)

let's make this like below I'm drawing.

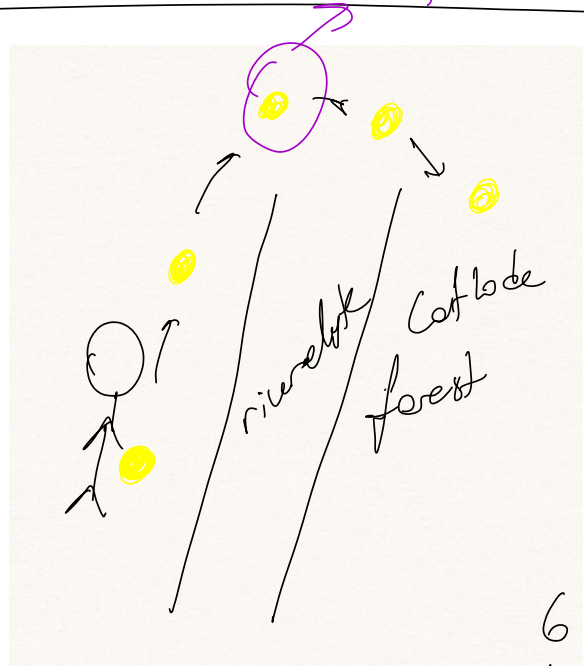
this is our river/ite.

this is our forest, we call it cathode. there are many trees to climb.

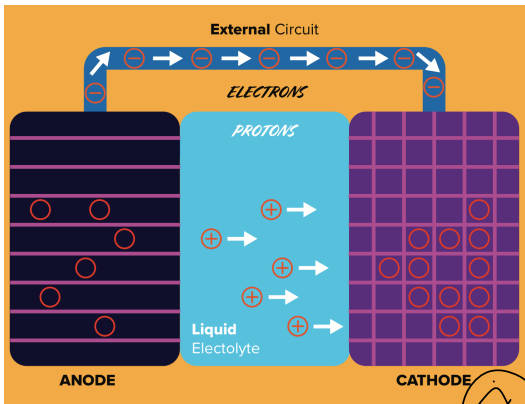


Do you know how I power your world?
 When you want to play with your phone, I also play my games!

5



6



7

First, I throw my electroball to the basket in the air. when I score, it gives power to your device. then, I swim across the river and climb trees in the forest to find my ball.

when I leave my home and reach to forest, my world powers yours! This is called discharge batteries.

but I feel tired after
playing.

Show Liti here
a little friend.

(8)

UJ
I need your help
to go back home!

Can you charge
my battery world?

Do you know
what happens?

(9)

When you charge
your battery,
It helps me to
throw my ball back
to have er jump
down from trees.

(10)

Do you know
there are so many
different worlds
of batteries?

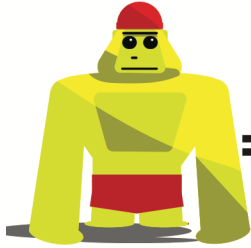
I want to introduce
you my friend's world
Nona and Kiki!

(11)



Nana

= this is Nana



Kiki

= this is kiki

12

Next: we will
show you who
run faster!