Technology: Electrical Trainer 1

This is a Sample Version of the Booklet. Some text and drawings have been obscured. A full completed version will be supplied when purchasing the training unit.

CONTENTS

INTRODUCTION and USE

Welcome to the thrilling world of electricity! Now that you have your Dekox Technolgy, Electrical Trainer 1 Board you can learn about electricity while doing simple experiments. In this kit we have included everything you will need to sta[illegible]ff on this electrical adventure, well except the batteries tha[illegible]

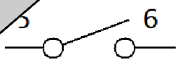
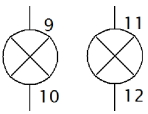
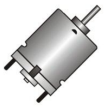
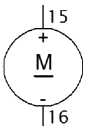
Each electrical component in the kit [illegible]rings, so you can do all the circuit assemb[illegible]der. To build a working project, all you [illegible]s to the terminals as shown in [illegible] is no danger when doing the[illegible]using low voltage batteries, not t[illegible]ges.

WARNI[illegible]connect the Technolo[illegible]trical wall plug outlets in[illegible]

[illegible] two 1,5V “AA” batteries.
[illegible] correct polarity.
[illegible]ries should not be recharged.
• [illegible]ries should only be charged under adult su[illegible]hould not be recharged while in the Electrical Train[illegible]
• Do not [illegible]alkaline, standard (carbon-zinc), or rechargeable batteries.
• Do not mix old and new batteries.
• Remove batteries when they are used up.
• Do not short circuit the battery terminals.
• Never throw batteries in a fire or attempt to open its outer casing.
• Batteries are harmful if swallowed, so keep away from small children.

Components:

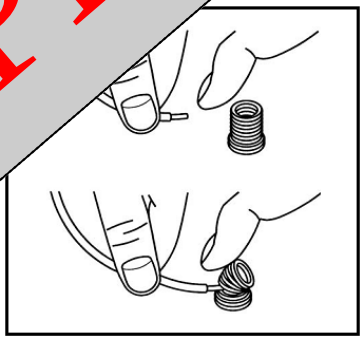
This Electrical Trainer has six basic but distinct components. Don't worry if you do not know them all, as you will learn more about them in your Technology Class with your teacher and as you build the different experiments.

Name (Abbreviation)	Picture	
Cell / Battery Holder and Batteries (BT1)		
Push Switch (S1)		
Slide Switch (S2)		
Lamp (L1	- E10 Bulbs	
Buzzer (		
Motor (M1)		

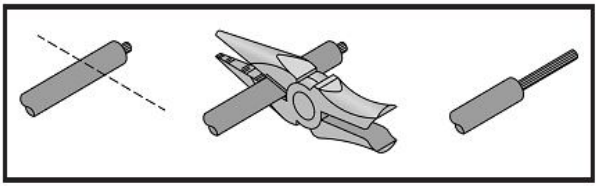
Wiring connections and circuits:

Your Electrical Trainer consists of electrical pa…nected to springs and mounted on a circuit board. Y…different lengths of wire to connect these springs … cir-cuit. It is usually best to use the shorte…m-fortably reaches between two spring… less confusing and easier to che…s a number next to it. For each …pring numbers to connect in orde…

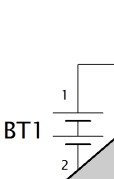
To connect a wire to … the spring back … one finger and … the wire into … spring a… firmly i… tou… …he wi… …lation does…



If the expos…tal ends of some of the wires break off due to great use, you should just simply remove 5 to 8mm of the insulation from the wire of the broken end. To remove the installation you should use a wire-stripper tool and NOT your teeth.



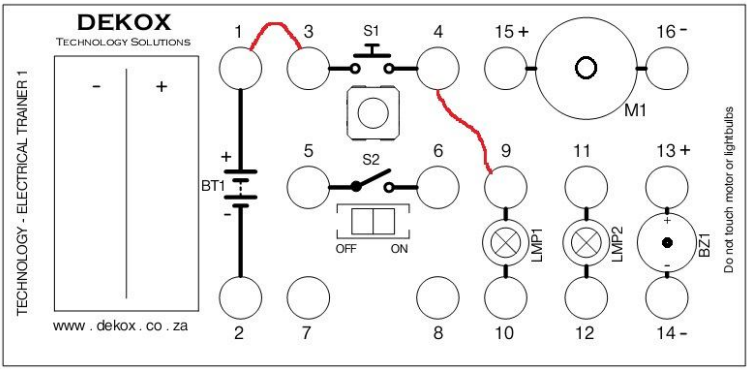
You will notice that each part of a component has a number allocated to it. Therefore when looking at the elect circuit diagram you can see which spring numbers ar ed to be connected together.



To further help you the connection guide and tick o ke them. So as in this example n spring number 1 to spring nu t you must join spring numbe

nections	
4-9	10-2
✓	

Your circuit e Electrical Trainer will therefore look something like the following for the two completed connections.



WARNING: Always check your wiring before turning on a circuit. Never leave a circuit unattended while the batteries are installed. Never connect additional batteries or any other power sources to your circuits.

Adult Supervision: Because children's abilities vary so much, even within age groups, adults should exercise caution as to which experiments are suitable and safe. It is best practice for the teacher to check each learner's circuit and wiring before they are allowed to switch on.

Dekox Technology Solutions will not be liable for damaged due to incorrect wiring.

Note: While building circuits, it is possible to accidentally make a direct connection between the terminals (a "short circuit"), as this will drain the batteries.
As an added safety feature, the Electrical Trainer has a hidden resettable fuse that will detect a short circuit, and reset itself after the short has been removed. However, this is a safety feature working under all circumstances.

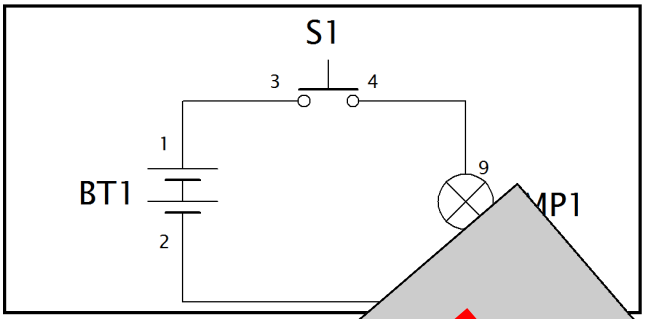
Make sure your child reads and follows all of the relevant instructions and safety procedures, and keeps them at hand for reference.

This product is intended for use by adults and children who have attained sufficient maturity to read and follow directions and warnings.

Happy Circuit Building

E # 1	Push button switch and Light

Circuit Diagram



Conn	
1-3	

1. Follow the … circuit
2. Let you… is wired correctly
3. Pres…
4. Y… is pushed down?

_____

5. …en the switch is released?

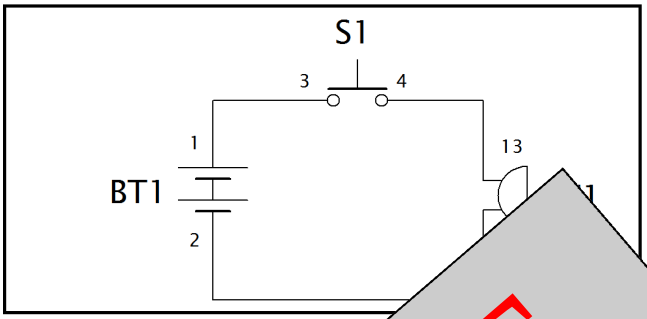
_____

6. We can therefore conclude that this push button switch only lets current flow in the circuit when held down.

Circuit built correctly	
Teacher's Initial:	Date:

E # 2	Push button switch and Buzzer

Circuit Diagram



Conne	
1-3	

1. Follow the c… …ircuit
2. Let your t… … wired correctly
3. When … …tch (S1) the buzzer
   wil… …able to send messages
   …ickly for a dot, and a little

J ●– – –
K – ●–
L ●– ●●
M – –
N – ●
O – – –
P ●– – ●
Q – – ●–
R ●– ●

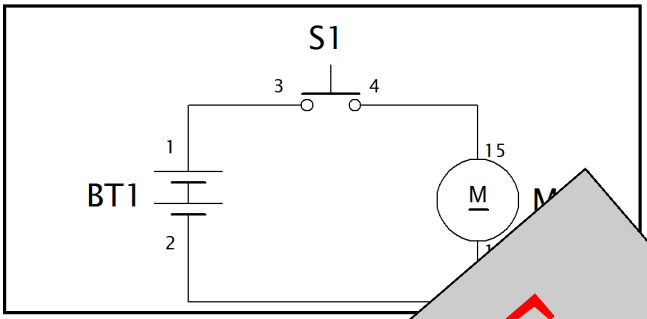
S ● ● ●
T –
U ● ●–
V ● ● ●–
W ● – –
X – ● ●–
Y – ● – –
Z – – ● ●

F ● ● – ●
G – – ●
H ● ● ● ●
I ● ●

Circuit built correctly	
Teacher's Initial:	Date:

E # 3	Push button switch and Motor

Circuit Diagram



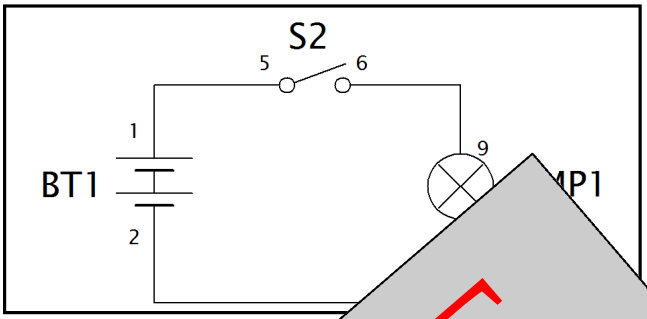
Connecti	
1-3	

1. Follow the cop… …cuit
2. Let your te… …wired correctly
3. Press an… …n (S1)
4. Wha… …ould have a switch a… …ivate your answer.

Circuit built correctly	
Teacher's Initial:	Date:

E # 4	Slide switch and Light

Circuit Diagram



Co	
1-5	

1. Make s… is in the OFF pos… is circuit
2. … nd wire the circuit
3. … the circuit is wired correctly
… the ON position
… to the OFF position
6. …rence in operation of a slide switch to … switch?

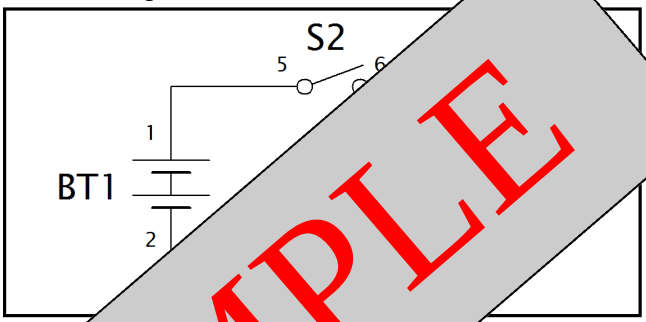
_____

_____

Circuit built correctly	
Teacher's Initial:	Date:

E # 5	Slide switch and Buzzer

Circuit Diagram



	14-2

1. lide Switch (S2) is in the OFF
   ou start wiring this circuit
2. nnection guide and wire the circuit
3. Let eacher check that the circuit is wired correctly
4. Slide the switch (S2) to the ON position
5. Slide the switch (S2) to the OFF position
6. Where do you think you could find or use a circuit like this one?

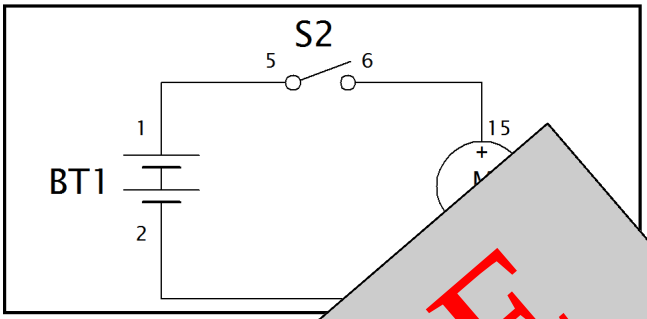
_____

_____

Circuit built correctly	
Teacher's Initial:	Date:

E # 6	Slide switch and Motor (Forward)

Circuit Diagram



Co	
1-5	

1. Make ... is in the OFF po... his circuit
2. ... nd wire the circuit
3. ... the circuit is wired correctly
4. ... the ON position
5. ... to the OFF position
6. ... did the motor turn, Clockwise or
7. ...e?

Circuit built correctly	
Teacher's Initial:	Date:

E # 7	Slide switch and Moto erse)

Circuit Diagram

ections	
6-16	15-2

1. re that the Slide Switch (S2) is in the OFF po ion before you start wiring this circuit
2. Follow the connection guide and wire the circuit
3. Let your teacher check that the circuit is wired correctly
4. Slide the switch (S2) to the ON position
5. Slide the switch (S2) to the OFF position
6. In what direction did the motor turn?

   Clockwise or Anticlockwise

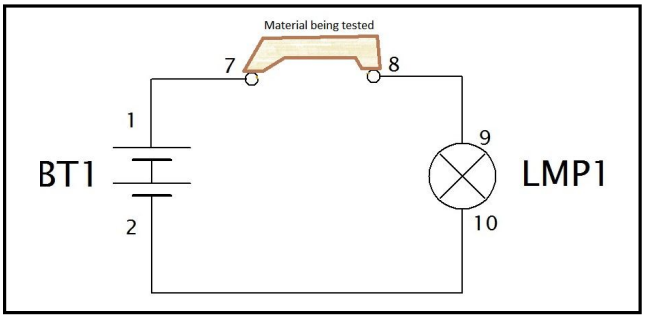
8. We now know that we can change the direction of a motor by _____

   _____

Circuit built correctly	
Teacher's Initial:	Date:

E # 8	Testing conductors and insulators

Circuit Diagram



Connections		
1-7	8-9	

1. Follow the connection guid
2. Let your teacher check t
3. Take different materi
lead and different
nals 7 and 8. S
the lamp t
4. Fill yo

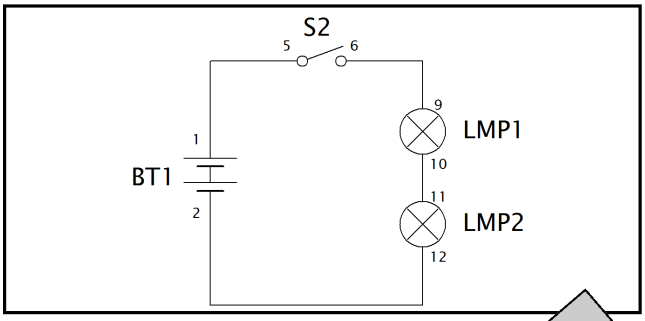
Material

Circuit built correctly

Teacher's Initial: Date:

E # 9	Slide switch and Lights in Series

Circuit Diagram



Make sure the Slide Switch is in the OFF position before you sta the circuit

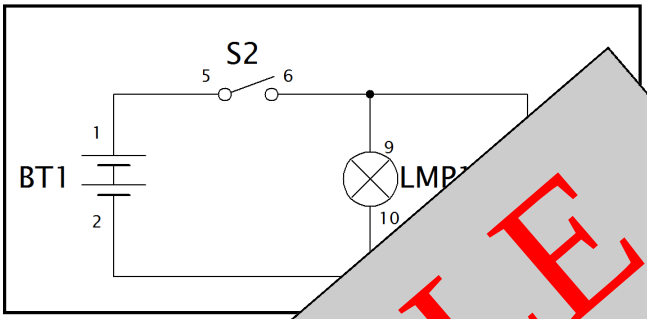
Connections		
1-5	6-9	1

1. Make sure that the Sl
   position before y
2. Follow the co cuit
3. Let your te wired correctly
4. Slide th on
5. Wh itness of the lights?

Circuit built correctly	
Teacher's Initial:	Date:

E # 10	Slide switch and Lights in Parallel

Circuit Diagram



Make sure the Slide Switch is in the OFF

ne circuit

1-5	6			10-12

1. M (S2) is in the OFF
   ng this circuit
2. F ide and wire the circuit
3. Let y k that the circuit is wired correctly
4. Slide t 2) to the ON position
5. What do y tice about the brightness of the lights?

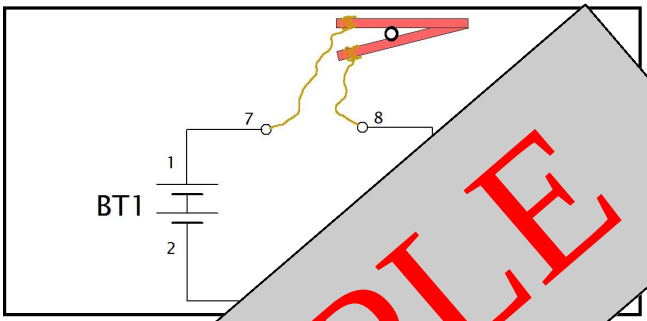
_____

_____

Circuit built correctly	
Teacher's Initial:	Date:

E # 11 Make your own clothes peg switch

Circuit Diagram



1-7	8	g1	8–Peg2

1. wire to make your own
   s shown in the picture.
2. guide and wire the circuit
3. Let eck that the circuit is wired correctly
4. Press e your self made switch to see the lamp light on off.
5. How do you think the circuit would operate if you used the clamping side of the clothes peg for the switch contacts?

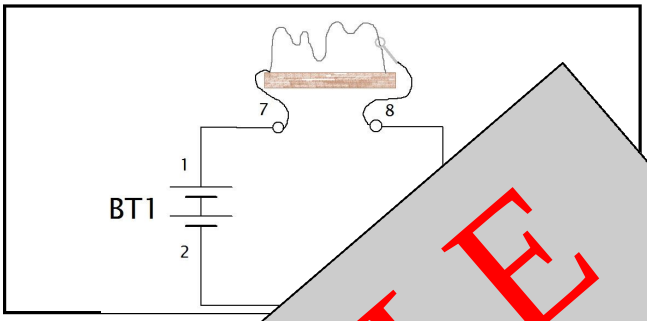
_____

_____

Circuit built correctly	
Teacher's Initial:	Date:

E # 12	Make your own wire loop game

Circuit Diagram



C			
1-7	8-13		8–ring

1. Ta… …d wire (coat hanger)
   … and down loops.
2. …ooden base plate.
3. …wire and form a ring and rod that
   …gh the loop maze.
4. Fo… …lection guide and wire the circuit
5. Let y… …cher check that the circuit is wired correctly
6. Test yo… wire loop game by challenging your friends to try completing it without the buzzer going off.

Circuit built correctly	
Teacher's Initial:	Date:

Notes / Rough Work