



EASE

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LESSON PLAN

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TITLE:

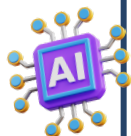
Make a paper circuit

GRADE LEVEL: 4TH, 5TH GRADE

STEAM AREAS: TECHNOLOGY,
ENGINEERING, ARTS, MATH

MATERIALS NEEDED:

- A4 tinted sheet - 1;
- Copper/Aluminum tape/insulated wires;
- 3V Coin cell- 1;
- LED- 1 (Any color);
- Colors;
- Glue;
- Masking tape;
- Scissors.



OBJECTIVES:

- To introduce learners to the circuits;
- To identify basic electronic components and their uses;
- To make a simple circuit of glowing LED.



PROCEDURE:

5Es approach to meet the outcome of STEAM activity.

ENGAGEMENT:(15 Mins)

You can start this lesson by using an ice breaker question: why does fan/light turns on when press the switch and vice- versa.

Introduce learners to the key vocabulary term electricity, circuits, LED (+ve and -ve terminals, wires, battery (source of energy)). Discuss that we are going to make a greeting card using basic electronics components.

EXPERIMENT: (30 mins)

1. Art: Guide the learner to fold the A4 sheet into two halves. Now, facilitator can decide to keep the art work uniform or allow learners to make any artwork they want. If you decide to keep it uniform, guide the learners to make rocket using simple shapes like rectangle, triangles, square etc and color it.



PROCEDURE:

- 2. Circuit: Draw circuit with pencil inside the card.
 - Carefully make two holes to insert the leads of LED in the paper.
 - Paste the copper tape inside the card such that it doesn't break.
 - Keep one of end the tape loose, do not paste it on the paper.
 - Suggestion: Avoid turning the tape, if it breaks, you might face difficulty in conductivity.
 - Now insert the LED through the holes and gently fold the leads of the LED such that they the copper tape and secure them with the masking tape.
 - Mark the positive and negative terminals of the LED on the paper.
 - Now keep the coin cell on one end and bring the loose and keep it over the coin cell.

EXPLAIN: (10 mins)

Discuss coin cell as the source of energy. It is important to attached the positive terminal of LED to the positive terminal of the coin cell. If one in case, someone's LED doesn't guide them to check the connections.

ELABORATION: (Homework)

You can guide the learners to make paper torches. Link is given in the references.

EVALUATION: (5 mins)

You can organise mind-mapping session or you can use interactive worksheets to ensure the learner has got the basic concept of the activity.

ASSESSMENT:

<https://www.liveworksheets.com/>

REFERENCES:

- https://drive.google.com/drive/folders/10A0QEEslQF-yKJatrgQ-Plk2iQb3ViyE?usp=drive_link
- <https://science.nasa.gov/paper-circuits-light-exploded-stars>
- <https://www.voltpaperscissors.com/paper-torch>