

Following current



STATEMENT OF INQUIRY

Adapting the functions of a system requires innovation.

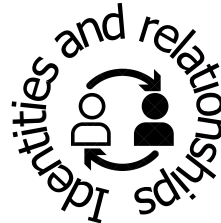
KEY CONCEPTS

AESTHETICS	CHANGE	COMMUNICATION	DEVELOPMENT
CONNECTIONS	CREATIVITY	CULTURE	COMMUNITIES
FORM	GLOBAL	IDENTITY	LOGIC
PERSPECTIVE	INTERACTIONS	SYSTEMS	TIME, PLACE AND SPACE

RELATED CONCEPTS

Function, Adaptation

GLOBAL CONTEXT



INQUIRY QUESTIONS

- What is electricity? What is electronics?
- What is the difference between conductors, semiconductors and insulators?
- How are the main electrical magnitudes related to each other?
- How do you read the value of an electrical resistance?
- Why do we talk of a digital revolution?
- To what extent has the emergence of electronics affected the development of humanity?

CONTENTS

- Basic functions of the main electronic circuit components: diodes and transistors.
- Symbols and their interpretation. Basic connections.
- Calculation of fundamental magnitudes and association of resistances. Application of Ohm's Law.
- Measurement of fundamental electrical magnitudes with the multimeter.
- Design and application in projects.
- Calculation of consumption and electrical power values in projects and everyday situations.

OBJETIVES

- Criterion A: Inquiring and analysing
 - i. explain and justify the need for a solution to a problem for a specified client/target audience
 - iv. develop a detailed design brief, which summarizes the analysis of relevant research.
 - Criterion B: Developing ideas
 - iii. present the chosen design and justify its selection
 - iv. develop accurate and detailed planning drawings/diagrams and outline the requirements for the creation of the chosen solution.
 - Criterion C: Creating the solution
 - iii. follow the plan to create the solution, which functions as intended
 - iv. fully justify changes made to the chosen design and plan when making the solution.
 - Criterion D: Evaluating
 - i. design detailed and relevant testing methods, which generate data, to measure the success of the solution
 - ii. critically evaluate the success of the solution against the design specification

EVALUATION CRITERIA

- Test on analysis and drawing of electrical circuits (learning exp 1)
- Use of simulators and protoboards (learning exp 2)
- Completion of dynamic versions of the textbook (learning exp 3)
- Problem solving using electronic circuits, using simulators for verification (learning exp 4)
- Final test on the knowledge acquisition and reflection (learning exp 5)

APPROACHES TO LEARNING

- Research: Information literacy skills: Understand and use technology systems
- Thinking: Critical-thinking skills: Troubleshoot systems and applications