Summary

Calculation using Excel functions.

Subject	Year	Start date	Duration
Digital Design	Year 2	Week 1, September	11 weeks 11 hours

Key and Related Concepts

Key Concepts

Key Concepts	Definition
Development	**Development** is the act or process of growth, progress or evolution, sometimes through iterative improvements.

Related Concept(s)

Adaptation, Innovation

Inquiry

Conceptual Understanding

Development of innovative methods of solving problems for further practical application.

Global Context

Global Context	Explorations to develop
Scientific and technical innovation	Models

Statement of Inquiry

Development of innovative methods for solving problems for further practical application.

Inquiry Questions

Type	Inquiry Questions	Line of Inquiry
Factual	What can you develop when you use Excel functions?	development
Conceptual	How is the process of adapting the Excel function to the vital needs of a person?	adaptation
Debatable	Are Excel feature innovations helping you make better use of resources?	Innovation

Curriculum

MYP subject group objective(s)

A: Inquiring and analysing

iv. develop a design brief, which presents the analysis of relevant research

C: Creating the solution

iii. follow the plan to create the solution, which functions as intended

D: Evaluating

i. describe detailed and relevant testing methods, which generate accurate data, to measure the success of the solution

Content (topics, knowledge, skills)

Entering formulas directly in a cell. Entering formulas in the formula bar. Editing formulas. Using results instead of formulas. Relative and absolute links, copying formulas. Use Paste Special when copying formulas.

Function concept.

Standard MS Excel functions. Statistical functions. Logical functions. Functions for working with text. Functions for working with dates.

Lists, rules for creating lists. Naming lists and fields. Using lists as databases.

Comparison criterion. Comparison criterion based on logical formulas. Autofilter. Filtered data editing. Filtered data output method.

Creation of charts based on the selected data area; based on data located on different sheets and in different books; automatic chart creation. Types of charts. Editing and formatting chart objects. Change values on a worksheet using a chart. Adding and removing data.

Skills

- to form an idea of information as one of the basic concepts of modern science, information processes and their role in the modern world;
- transform information according to the specified rules;

- be able to present information in tabular form;
- perform calculation and forecasting using Excel functions;

ATL Skills

ATL skills

Description

Consider content by answering questions:

- What have I learned today?

- What have I not yet understood?

- What questions do I have now? students learn on criterion D by reflecting on the work done.

Effectively convey information and meaning to different audiences using different formats and means while working on solving the problem in criterion C

Collecting, recording and verifying data will be necessary for students according to criterion A, for further solving the problem.

Communication

- I. Communication skills

  Exchanging thoughts, messages and information effectively through interaction

    Give and receive meaningful feedback

Research

- VI. Information literacy skills

  Finding, interpreting, judging and creating information

    Collect and analyse data to identify solutions and make informed decisions

Thinking

- X. Transfer skills

  Utilizing skills and knowledge in multiple contexts

    Make connections between subject groups and disciplines

Developing IB Learners

IB Learner Profile

Knowledgeable

Thinkers

Description

Knowledgeable this quality will develop as you learn Excel functions and create a product in Stage C.

Thinkers will help you decide which features to choose (use).

Integration

International Mindedness

Understanding the work of Excel functions and their areas of application helps students to easily and quickly perform complex calculations and perform a wide range of different manipulations with information.

Connections

Language Development

Students in the design process will study and use professional terms, mathematical and logical concepts in their work. They are closely related to mathematics, as they work in a Microsoft Excel spreadsheet.

Information Communication Technology

The following IT resources will be used during the study and in the creation of the presentation:

- MS Teams platformword;
- processors Google Docs, MS Office WordGoogle;
- Presentations editor, MS Office PowerPoint;
- spreadsheet processor Microsoft Excel.

Assessment

Formative Assessment

Students complete current assessment assignments by completing electronic worksheets on the MS Teams platform.

Students receive a **Design Situation**:

We live in a very difficult time when we are all threatened by the COVID-19 virus. It is necessary to know how successfully the fight against it is going. For this purpose, we must collect statistics on the number of cases in different periods of time and make a forecast about the success of the measures taken. We decide to use the Excel functions to calculate our forecast.

The work on the final project takes place in three stages in accordance with the Design Cycle.

Stage A evaluates:

- statement and substantiation of the problem

Stage B assumes that students will receive a ready-made technical assignment.

Stage C evaluates:

- a description of the changes made and the presentation of the result in the form of a table

Stage D evaluates:

- verification of the forecast made

Summative Assessment

Students use the functions of a spreadsheet processor to create their own forecasts for the spread of the Covid-19 virus. The main requirements put forward to students: chosen their own style, create a forecast. At the last stage, students demonstrate their predictions, can answer questions about the calculation using Excel functions.

NOV 26 Calculation using Excel functions.
Summative Quiz Friday at 5:00 PM

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MYP Assessment Criteria

N/A ☑ A: Inquiring and analysing

N/A ☐ B: Developing ideas

N/A ☑ C: Creating the solution

N/A ☑ D: Evaluating

Description

Peer and Self-assessment

Students' work is assessed at stage C and at stage D.

After creating the product, students demonstrate their predictions to classmates, who, in turn, consider what functions were used and give oral feedback, after which the student developers can correct some of the shortcomings.

Self-assessment assignments are given at the "D. Evaluating" stage.

During the performance of the "Technical Assessment" task, students-developers independently evaluate their product in accordance with the requirements of the previously received technical assignment.

Also, after the fully completed work, as a reflection, students are invited to fill out a self-assessment table for developing skills in the design process.

Learning Experiences

Prior Learning Experiences

Students were exposed to Excel functions. Know how to make presentations. They know what Design Cycle is and have gone through all the stages.

Learning Experiences and Teaching Strategies

Teaching Strategies

At the research stage, students work with theoretical material, consistently filling out their electronic workbook, work with Microsoft Excel, make generalizations and conclusions and understand what information they need to create their own forecast.

At the stage of creating a product, students receive a technical assignment, understand the evaluation criteria and the boundaries of their project. While working, they record their results and progress, at each stage. The results of the work are presented in the form of a presentation, they demonstrate their own forecast to classmates.

At the stage of product evaluation, students conduct a technical assessment by comparing the shadow task and the result obtained. They also conduct a survey among classmates. Suggest options for improving performance. Conduct reflection on the work done.

When organizing classes, the following methods are used:

- individual research
- demonstration of analogs
- tasks in an electronic notebook
- group discussions
- problem solving

Student Expectations

Students use the MS Teams platform for problem solving reporting, saving their files, and electronic workbooks.

Feedback

After completing the assignment (or group of assignments) of the current assessment, the student sends the file for review. The teacher has the opportunity to view the intermediate work of the student and leave comments for each fragment of the assignment in text form on the MS Teams platform.

Differentiation

Students with weak work skills, or those who wish, receive a step-by-step workflow for a more detailed study of skills and creation of a project.

Reflections

General Reflections

During the unit

Andrey Samosadov Nov 8, 2021 at 1:33 PM

Students like to make calculations using Microsoft Excel and thereby optimize their time costs.