



## **TRAINING PLAN**

*This 2-3-day professional training is expected to enable users to cover all the necessary materials to use the Roqed Science interactive program.*

### **WHAT IS ROQED SCIENCE?**

ROQED Science Interactive Program Provides the ability to model and conduct educational demonstrations for middle and high school students. The program contains models and animations in the following subjects: Biology, Physics, Geography and Chemistry. Moreover, the program includes educational models and animations for additional education and the development of interest in science, it enables students to study Mechanics, Microbiology, Astronomy and Paleontology in more detail.

ROQED Science includes a function lightweight animation creation using existing models in the program. All models and their constituent parts are described in more than 12 languages including English, Spanish, German, French, Turkish, Italian and Russian. ROQED Science also contains functionality for creating compliance assignments, assembling a model and defining a part in a model. Students can move on to a more in-depth study of the material on their own in the lesson, provided they have a personal computer or a mobile device.

### **AFTER TRAINING THE USER WILL BE ABLE TO:**

1. Prepare the software for use;
  - Install and activate the software;
  - Get acquainted with personal account;
  - Customize system, graphics, and sound settings.
2. Open the required category, the desired model, and animation.
3. Confidently work in 3 modes (study, animation, slides);
  - Manipulate the model. Move the selected object from side to side, rotate it, and scale it.
  - Turn on animation. Pause it and switch between scenes.

- To compose author's presentations, as well as test assignments (6 types) attached to them.
4. Enjoy additional features.
- Change background;
  - Turn on / off musical accompaniment;
  - Turn on / off and control the volume of the computer voice;
  - Display the name of each object;
  - Open / hide annotation window.

## SESSION # 1

*Duration 60 minutes.*

1.	Introduction to Roqed Science	Video (1 min)	<a href="https://www.youtube.com/watch?v=31MRLe6hd94">https://www.youtube.com/watch?v=31MRLe6hd94</a>
2.	Familiarization with the official website <b>Roqed Science</b>	2 minutes	<a href="https://roqed.com/roqed-science/">https://roqed.com/roqed-science/</a>
3.	Software installation and activation	5 minutes	The software download link is provided by the trainer.
4.	Familiarization with the user's personal account	2 minutes	<ul style="list-style-type: none"> <li>• Activation date;</li> <li>• Expiration date;</li> <li>• E-mail to which the software was registered;</li> <li>• The name of the device to which the key was registered;</li> <li>• Program version.</li> </ul>
5.	Configuring system, graphic, and sound settings.	3 minutes	<ul style="list-style-type: none"> <li>• Language change;</li> <li>• The way to save the prepared work;</li> <li>• Sound effects control;</li> <li>• Optimization of graphics, software speed.</li> </ul>
6.	Selection of the required category	2 minutes	Familiarization with the current content, as well as with the models that are in development.
7.	Acquaintance with the working panel, as well as with the "Research" mode.	30 minutes	<i>Appendix 1.</i>
8.	Training exercises	10 minutes	Independent work in the "Study" mode.
9.	Homework	5 minutes	.....

## APPENDIX 1



Getting started, you need to select a model in the required category. After the selected model opens, you will automatically enter the **"Study"** mode.

**Study mode** is a sandbox of the 3D world. This is where you have complete control over your 3D model. You will be able to rotate the model around an axis, move it along a certain plane, carry out scaling, and also study the methodological part of any object.

### ***LET'S START!***



After loading the model, a scene will appear where special buttons will be placed that allow you to perform certain manipulations on the model.


#### *WORKING ON PC, LAPTOPS USING THE MOUSE.*

1. In order to move an object from side to side, you need to press (do not release) the wheel of the mouse button and move your hand in the desired direction. After that, the object will change its position.
2. In order to rotate and view the object from different sides, you need to press the right mouse button (do not release)  and move it in different directions. Thus, you can familiarize yourself and thoroughly study the structure of any object from different sides and from different angles.
3. In order to reduce or enlarge an object, you need to scroll the mouse roller up or down. This will give you the maximum magnification of the object, where you can explore any part of it deeper.
4. In order to separate any part from the object, you need to press the left mouse button (do not release)  select the part that you want to separate and move it to the side. This way, you can get to the most difficult to access parts, separate them and learn more about them.

**Note:** *if you have lost an object from the field of view, just click 2 times on the screen, and it will automatically return to its initial position.*

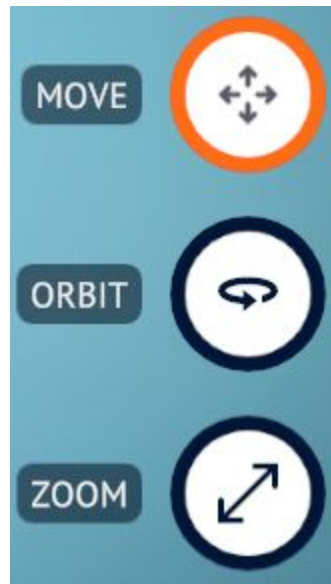
#### *OPERATION ON THE TOUCH PANEL.*

1. In order to move an object from side to side, you need to touch the touch panel with one finger (to an empty spot on the screen)  and move your hand in the desired direction. After that, the object will change its position.
2. In order to rotate and view the object from different sides, you need to touch the touch panel with two fingers (on an empty spot on the screen)  and move it in different directions. Thus, you can familiarize yourself and thoroughly study the structure of any object from different sides and from different angles.





3. In order to zoom in or out on an object, you need to place two fingers on the touchpad  . Squeeze or unclench them. The object will be reduced or maximized. By doing this, you can study any part of it deeper.
4. In order to separate any part from the object, you need to press on it with one finger and take it out to the side. This way, you can get to the most difficult to access parts and learn more about them.

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### INTRODUCTION TO THE MOVE, ROTATE , ZOOM BUTTONS



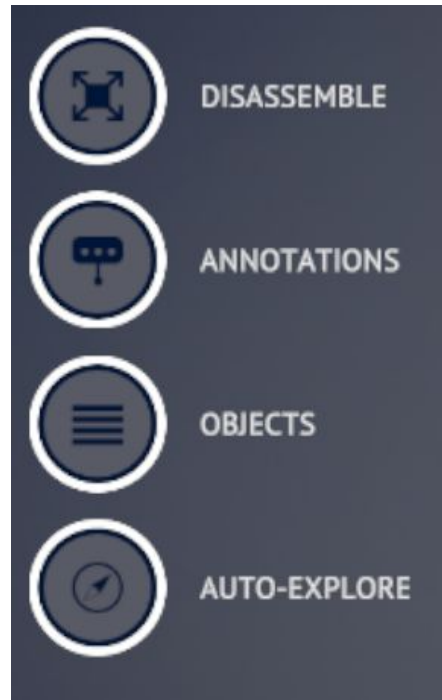
Using these buttons, you have the opportunity to work with any specific part of the model.

1. **"MOVE"** - required for manual disassembly of an object in any order. By clicking on it, it lights up orange. This signals that the button is active. After that, using the left mouse button  (one finger is used for interactive panels  ), you can divide objects into their component parts.
2. **"ROTATE"** - allows you to rotate a specific object around the central axis.
3. **"ZOOM"** - allows you to increase / decrease a separate object of interest to you inside the model. To do this, you need to select the part of the model you need, and holding down the left mouse button  (for interactive panels, one finger is used  ) pull it down or up. By doing this, you will achieve the size you need.

***Note:** if you have lost an object from the field of view, just press 2 times on the screen, and it will automatically return to its initial position.*

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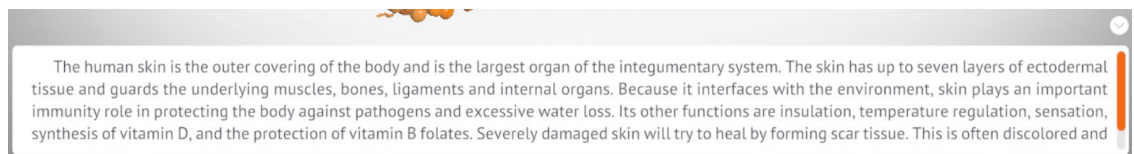
*GETTING STARTED WITH THE BUTTONS "ASSEMBLY", "DISASSEMBLY", "ANNOTATIONS", "OBJECTS"passed*



Having To the left side of the screen, you will see auxiliary buttons that work automatically.

*LET'S MEET THEM!*

1. **"ASSEMBLY / DISASSEMBLY"** - by pressing this button, the model will be automatically analyzed into all its components. With the same trailer, by pressing the button **"ASSEMBLY"**, the model will be assembled to its initial position.
2. **"ANNOTATIONS"** - is necessary in order to display the name of each object. It works exclusively as a disassembled model. To do this, disassemble the model and click on the button **"ANNOTATIONS"**. Try to rotate the model along the entire axis and the system will automatically accompany each object, displaying the name of each part.
3. **"OBJECTS"** - serves as a search engine for necessary objects. By clicking on it, you will have a list of all the parts that make up the entire model. Having selected the required object from the provided list, it will turn green. By clicking on the name of the object 2 times, the camera will automatically guide you to its location.
4. In order to display the description of each object, you need to move to the lower right part of the screen and click on the **"ARROW"**. To expand the window, click on the adjacent icon.

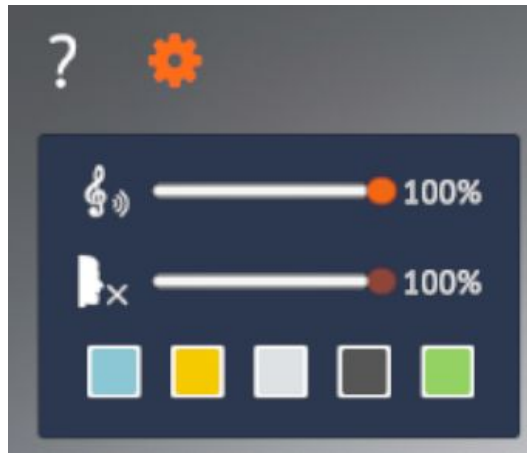


This will allow you to fully familiarize yourself with the methodological part of this model.




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### ADDITIONAL FEATURES

Moving to the top of the screen, you will see additional buttons.



LET'S SEE EACH OF THEM!

1. **"CHANGE BACKGROUND"** - by clicking on it , you can choose a suitable color for rendering your model.  
For example, opening the model **"Incandescent"** will be better if we change the background to black. This will allow you to better see the rays of light emanating from it.
2. **"Treble clef"** -  allows you to turn on / off music. This will add more color when viewing the model, as well as animation.
3. **"Voice"** -  allows you to turn on / off voice guidance. It also has a mixer that lets you control the volume of your computer voice.  
By clicking on **"Voice"**, he will start reading the very first description of this model.  
You can jump from one object to another. Thus, it will automatically accompany the text.

### SESSION # 2

*Duration 60 minutes.*

1.	Checking homework	10 minutes	Working in the "Research" mode
2.	Consolidation of knowledge on the first session	5 minutes	
3.	Acquaintance with the "Animation" mode.	25 minutes	<i>Appendix 2.</i> <ul style="list-style-type: none"> <li>● Start animation;</li> <li>● Launch of voice guidance;</li> <li>● Frame switching;</li> </ul>

			<ul style="list-style-type: none"> <li>• Selecting a specific frame;</li> <li>• Moving to another scene;</li> <li>• Return to the previous scene.</li> </ul>
4.	Training exercises	15 minutes	Independent work in the "Animation" mode.
5.	Homework	5 minutes	..... ..

## APPENDIX 2

Getting started, you need to select a model in the required category.


**Note:** when choosing a model with animation, pay attention to the upper left corner.

The corresponding icon must be present . This means that this model has animation.

After the selected model opens, you will automatically enter the mode "**Research**". In order to switch to the mode "**Animation**", you need to click on the "**Research**" mode and select the mode "**Animation**".

The "**Animation**" mode is a sequential display of frames one after another. The main difference of this mode is that all information is packed and put in the appropriate order for easy perception by students, where the theory is transformed into a visual picture (graphic) in order to present a larger, and most importantly, high-quality amount of information in a minimum period of time.


Each lesson is explained in an accessible language. This will make the learning process more interesting, exciting and will arouse students' special interest in the exact sciences.


**Important information:** before starting the animation, it is recommended to first turn on the sound , and then start the animation.



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## CONTROL

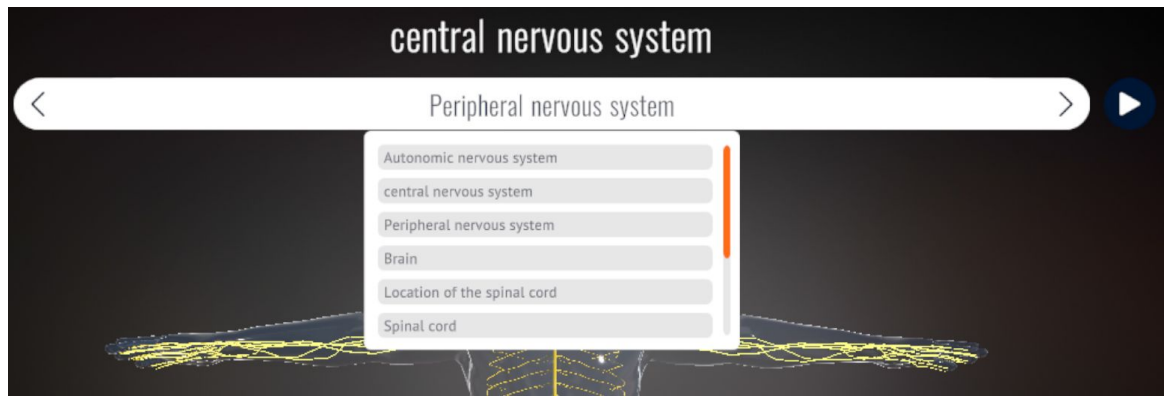
### ANIMATION LET'S START!

1. In order to pause the animation, you need to click on the icon  located at the top of the screen. This will allow you to pause the animation and better examine the frame. To play it

again, click on .

2. In order to move to the next or previous frame, you need to click on the buttons   which are located at the top of the screen.

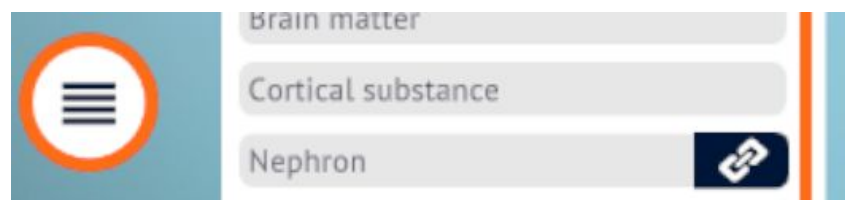
- In order to quickly find and switch to the required frame, you must click on the name of the frame and a list of sequences of all frames will appear. It looks like this:



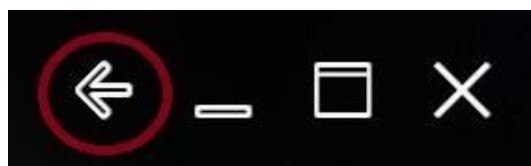
*Note: use the slider to move down to the bottom of the list.*

- When watching an animation, you can also quickly switch to another scene that is related to that theme. To do this, click on the "button **Objects**". A list of objects with will appear "**paperclip**" that are relevant to this animation.

*Note: objects without paperclip have no animation.*



- In order to return to the previous scene (animation), click on the arrow "**Back**", which is located in the upper right part of the screen.



### SESSION # 3

*Duration 60 minutes.*

1.	Checking homework	5 minutes	Working in the "Animation" mode
2.	Consolidation of knowledge on the first session	5 minutes	
3.	Introduction to the "Slides" mode.	25 minutes	<i>Appendix 3.</i> <ul style="list-style-type: none"> <li>Call the work panel "Edit";</li> <li>Add page;</li> </ul>

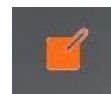


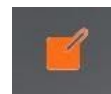
			<ul style="list-style-type: none"> <li>• Slide text;</li> <li>• Arrangement of objects;</li> <li>• Screenshot;</li> <li>• Removing a slide;</li> <li>• The choice of the type of task (6 types), as well as the principle of their preparation.</li> <li>• Save and open the presentation.</li> </ul>
4.	Training exercises	20 minutes	Independent work in the "Slides" mode.
5.	Homework	5 minutes	Create your own presentation with test assignments.

### ***APPENDIX 3***

Getting started, you need to select a model in the required category.

After the model you have selected opens, you will automatically enter the mode **"Research"**. In order to switch to the mode **"Slides"**, you need to click on the **"Research"** mode and select the mode **"Slides"**.

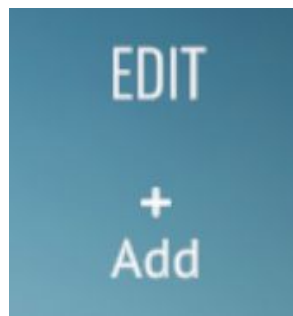


After that, an additional icon will appear in the upper left corner . By clicking on it, the work area will appear on the right side of the screen.

**"Slides" mode** is the author's method of composing your own presentation works. The teacher will be able to present information in a more detailed, systematic, structured way, where every object, every detail will be affected.

### ***GETTING STARTED TO CREATE YOUR OWN PRESENTATIONS!***

1. In order to add a page, you need to click on the button "+" in the work area, which is located on the right side of the screen.




2. After clicking, a window will appear where you can write the required text in the cell "**Slide Text**".





After entering text in the cell "**Slide Text**", it will automatically appear in the center pane located at the top of the screen.



3. After entering the necessary information using the mouse (fingers in the interactive panels), you can disassemble, rotate, move your model to the desired position for a more detailed disclosure of your lesson.

4. After making changes on the first page, click on the button . This will save your work on this page.

**Important information:** after making changes to each page you must always press the button . Otherwise, the changes made will not be saved.

5. To delete an unnecessary slide, click on the icon .
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## CREATING TEST ASSIGNMENTS

**Test assignments** - allow you to consolidate the knowledge of the passed material of students, as well as identify problematic issues.

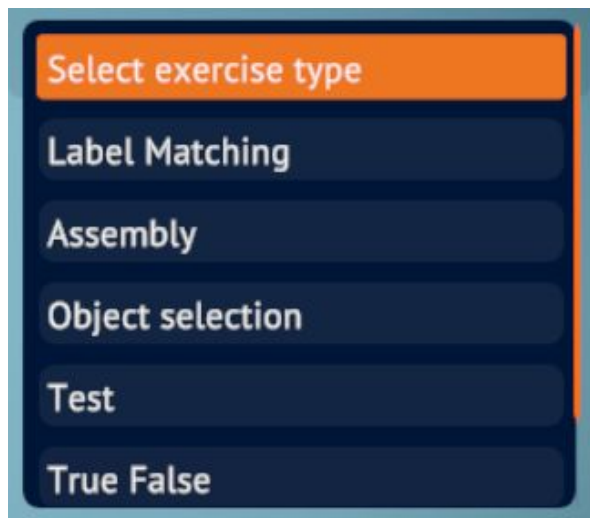
Roged Science has 6 types of test items:

- Label matching;
- Assembly;
- Object selection;
- Test;
- True False;
- Short answer.

## LET'S GET TO KNOW EVERYONE INDIVIDUALLY

1. **Label matching** - this type of test allows you to test the student's knowledge by dragging and dropping the proposed options to the corresponding objects.

To do this, you need to add a page and disassemble the model into separate objects. Then in the cell "**Select the type of task**" select the test "**Matching labels**". The test will be created automatically.



After that, start dragging the proposed options to the corresponding objects.

*Note: if you answer correctly, the screen will turn green, and if you answer incorrectly, it will turn red.*

2. **Assembly** - this type of test by dragging and dropping objects allows you to reassemble the model to its initial position. By doing this, the student visually remembers the location of all objects.

To do this, you need to add a page and disassemble the model into separate objects. Then in the cell "**Select the type of task**" select the test "**Assembly**". The test will be created automatically.

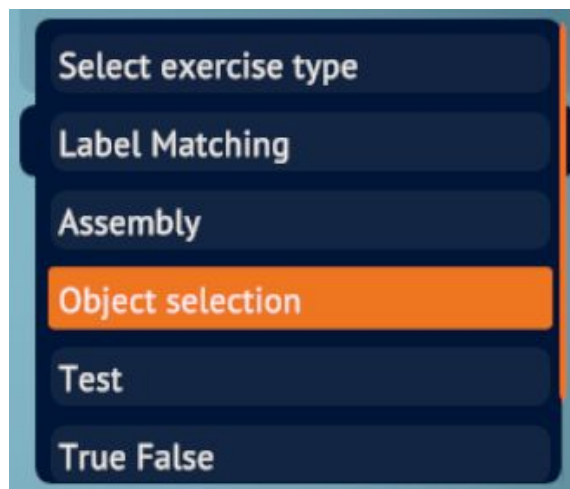


After that, start dragging the objects to the starting position. The program will highlight the correct position by highlighting.

*Note: if you answer correctly, the screen will turn green, and if you answer incorrectly, it will turn red.*

3. **Object selection** - this type of test by composing a question allows you to determine / select the correct object.

To do this, you need to add a page. Then in the cell "**Select the type of task**" select the test "**Select an object**".



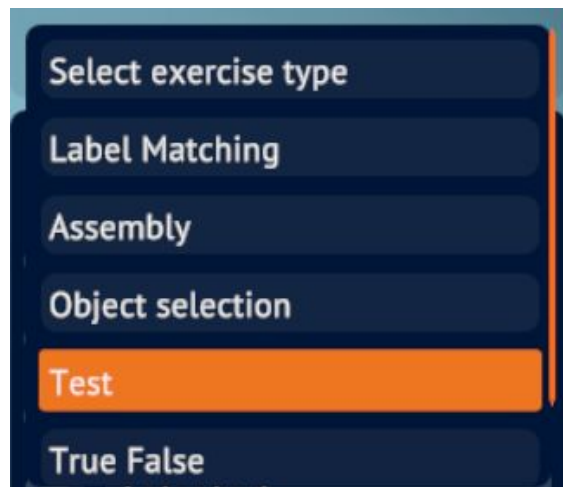
After that, write your question in the cell "**Slide Text**" and select the correct object in the scene. The object will be saved automatically.

Answer object selected!

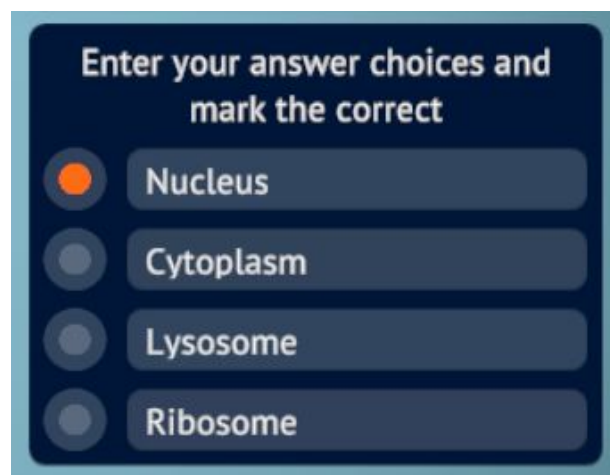
*Note: if you answer correctly, the screen will turn green, and if you answer incorrectly, it will turn red.*

4. **Test** - this type of test allows you to check the student's knowledge by composing a question, as well as by linking 4 answer options.

To do this, you need to add a page. Then in the cell "**Select the type of task**" select the test "**Test**".



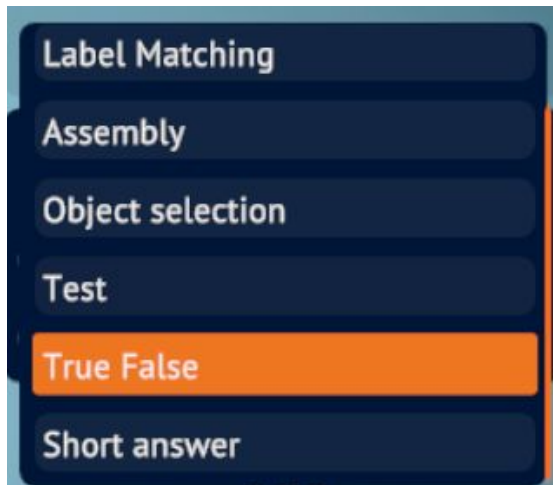
After that, write a question in the cell "**Slide Text**" and write 4 answer options. Click on the correct option (orange color should light up).



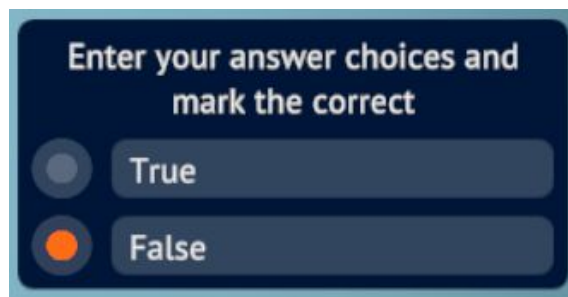
*Note: if you answer correctly, the screen will turn green, and if you answer incorrectly, it will turn red.*

5. **True / false** - this type of test allows, by means of some statement (fact), to test the student's knowledge, answering it is true or false.

To do this, you need to add a page. Then in the cell "**Select the type of task**" select the test "**True / False**".



After that, write the scientific statement in the cell "**Slide Text**" and click on the correct option (orange should light up).



*Note: for a correct answer, the screen turns green, and for an incorrect answer, it turns red.*

6. **Short answer** - this type of test allows, by composing a question, to get an accurate answer from the student.

To do this, you need to add a page. Then in the cell "**Select the type of task**" select the test "**Short answer**".



After that, compose a question in the "Slide Text" cell and write a specific answer (term) to it in the "Enter the answer options and mark the correct ones"

For example,

A form with a text input field containing 'DERMA' and a 'CHECK' button.

After you, or the student, you need to click on the "Check" button.

*Note: the answer should preferably consist of 1-3 words (terms).*

*If you answer correctly, the screen will turn green, and if you answer incorrectly, it will turn red.*

**CONGRATULATIONS! NOW YOU CAN MAKE YOUR OWN TEST QUESTIONS!**

### HOW TO SAVE AND OPEN YOUR PRESENTATION?

1. After you finish drawing up the presentation, as well as the test tasks, click on the "Save" button, which is located below.



After that, specify the path to save your work and click "Save".

2. In order to open the presentation you need:
  - Run the program;
  - Open the model on which you have made a presentation;

- Switch to the "Slides" mode and open the "work panel".
- At the bottom, click on the "Open" button and select your project.

