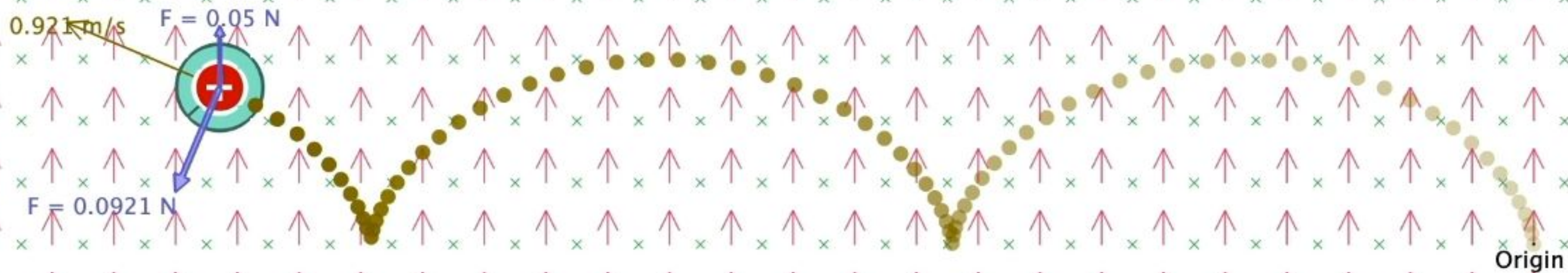


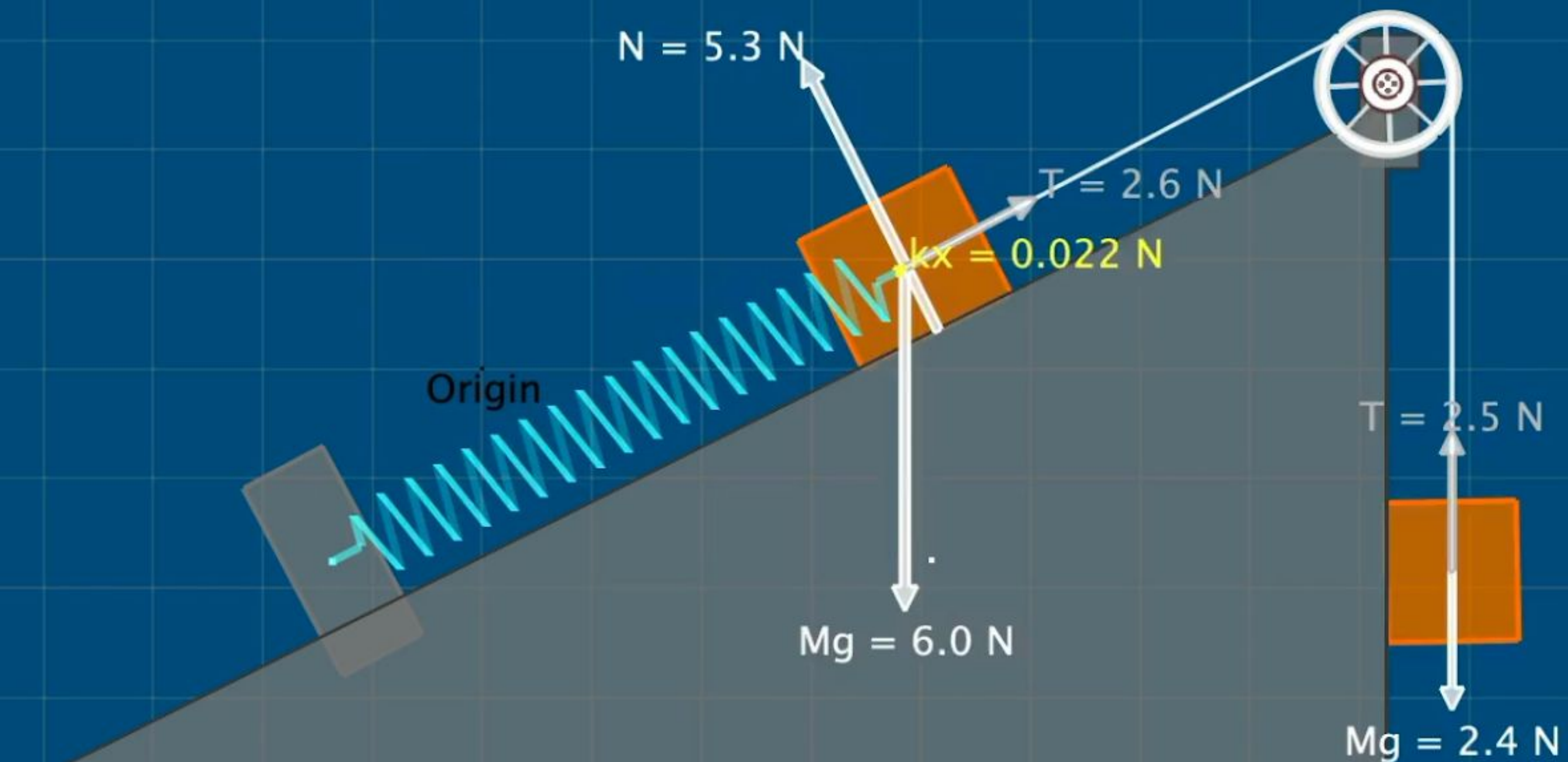
Simphy

Physics Simplified



What is SimPHY ?

SimPHY is an interactive Physics simulator. It allows users to create complex simulations using simple tools that enhance STEM learning and aid visualisation.

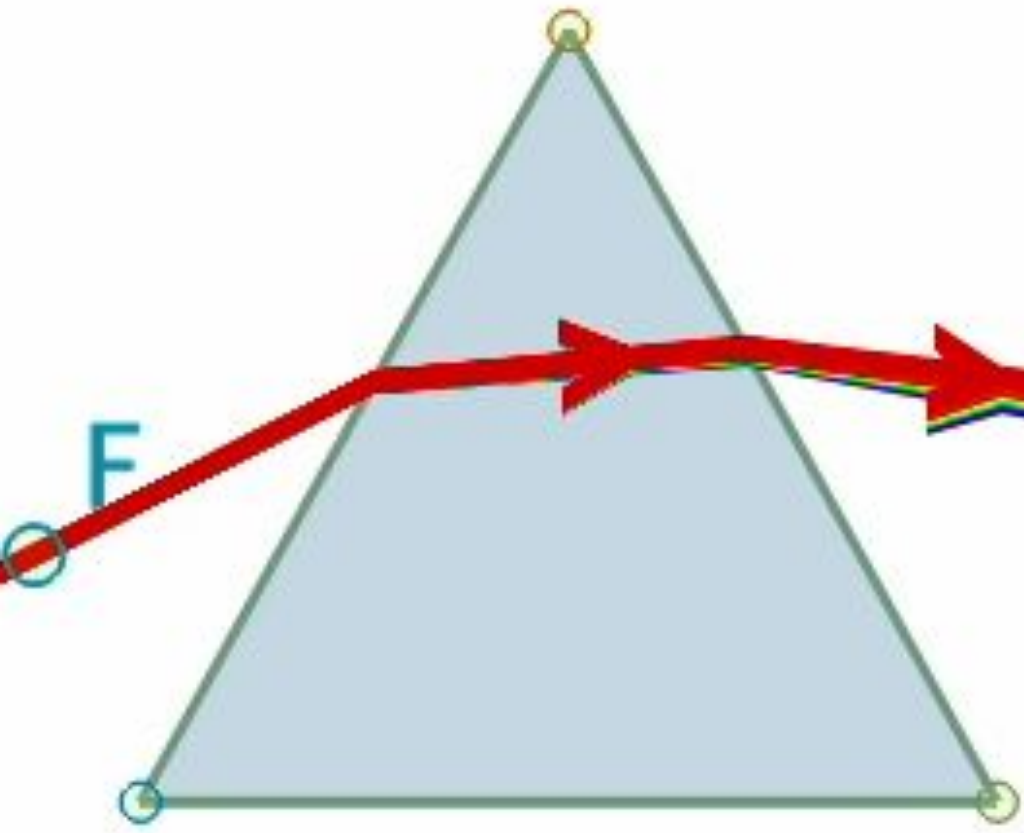


Simulations

“A simulation is the imitation of the operation of a real-world process or system over time.”

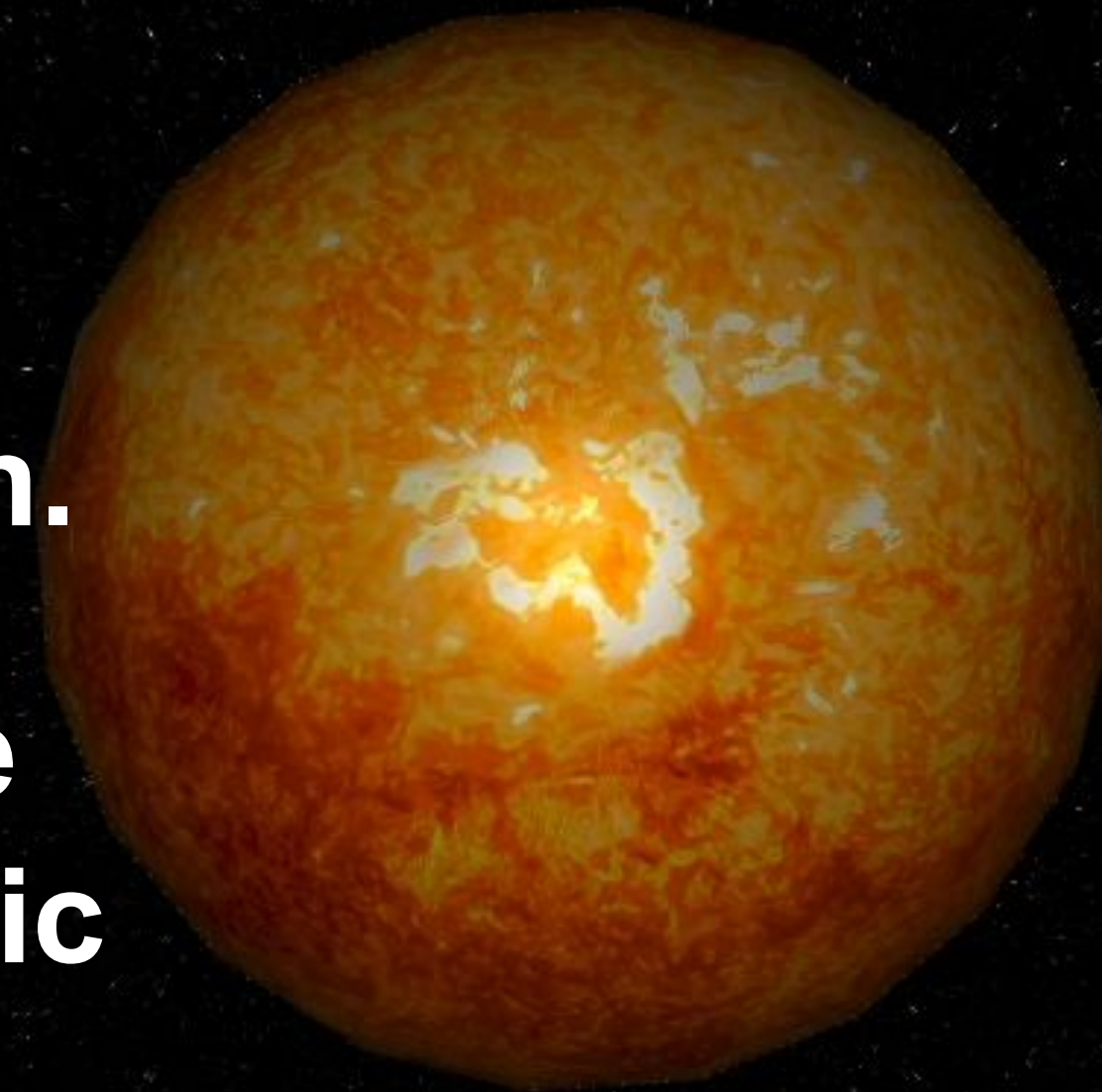


Importance of Simulations in Classroom

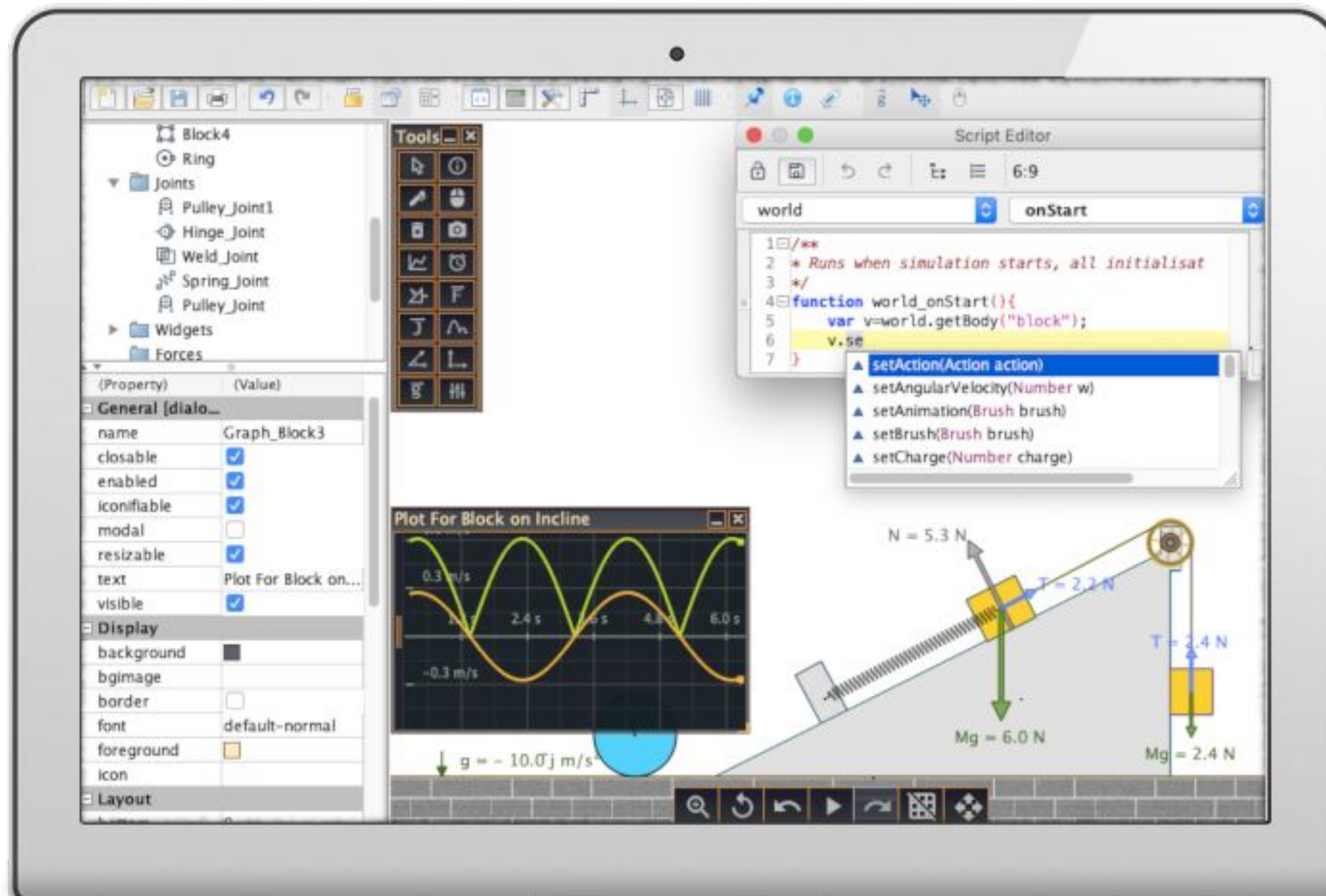


- **Assist teachers in teaching abstract concepts of Science.**
- **Allows students to experience scenarios that cannot be physically recreated.**
- **Accurately solve questions and queries by turning them into simulations on the spot.**

- **Simulations can be used in place of time consuming static diagrams.**
- **Live creation of simulation in classrooms increases class participation.**
- **Simulations help students in visualisation.**
- **Dynamic simulations increase knowledge retention in students as compared to static images.**



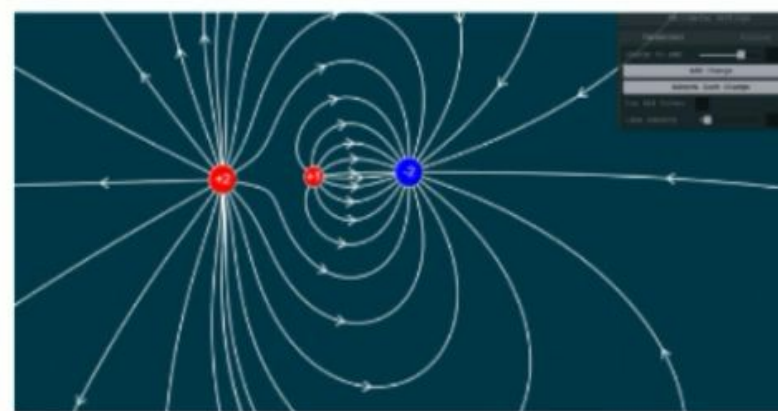
Modules in SimPHY



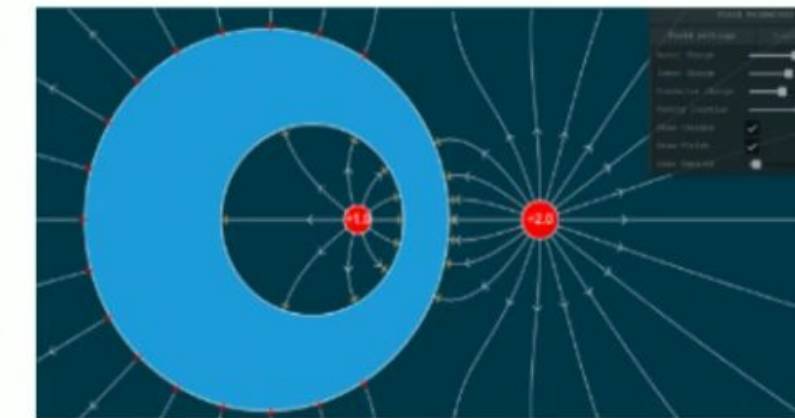
- Mechanics
- Circuits
- Optics
- Geometry
- Fluids
- 3-D Simulations
- Plug and play pre designed simulations

Plug and Play Simulations

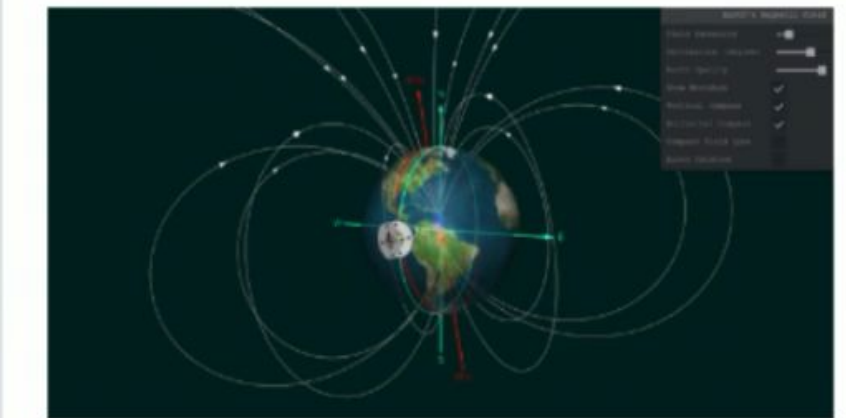
- Pre designed simulations in accordance with school curriculum.
- Click and play simulations curated for all topics of Physics Mathematics and Chemistry.
- Simulate and reach solutions to JEE & NEET level questions



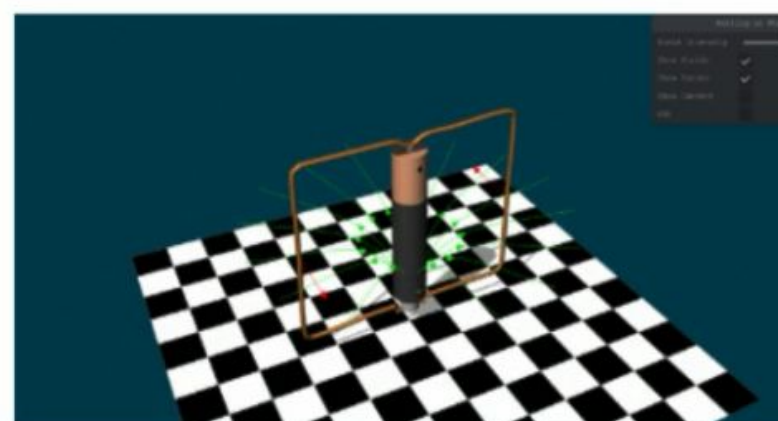
Charge Field lines



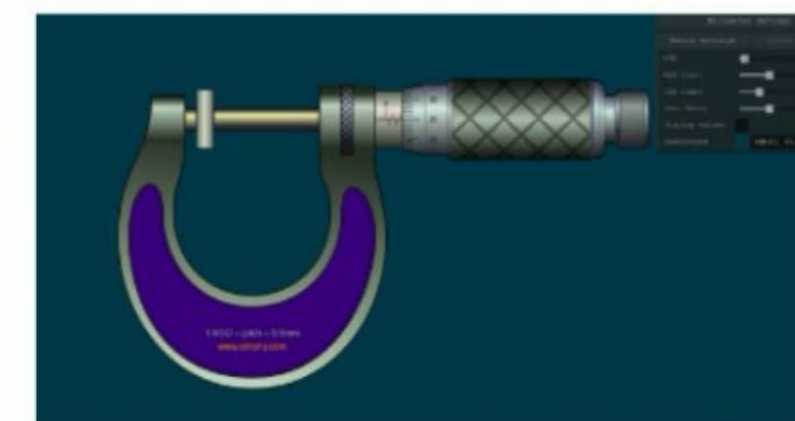
Conductor Field Lines



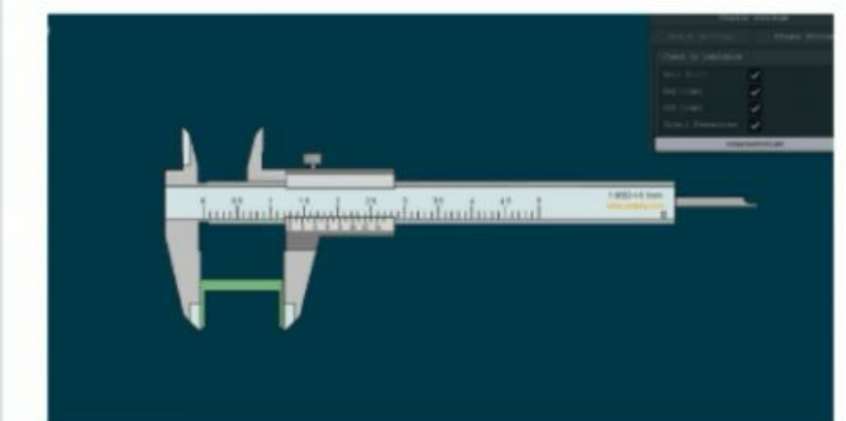
Earth Magnetic Field



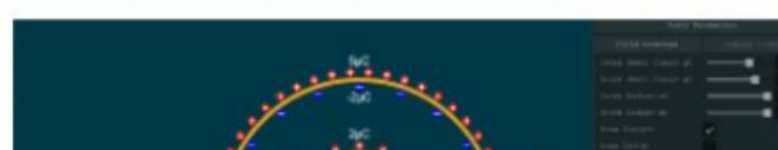
Homopolar Motor 3D



Micrometer



Vernier Calliper



Scripting with SimPHY

- Create 3-D simulations

- Design games

- Students can learn coding

The screenshot displays the SimPHY software interface. On the left, a 'Script Editor' window shows JavaScript code for a 3D cloth simulation. The code includes comments for theory references, variable declarations for canvas, physics accuracy, mouse influence, gravity, cloth dimensions, and spacing, and a function definition for a Point object. The main window shows a 3D simulation of a blue wireframe cloth with two holes, rendered on a light gray background. A 'Reset' button is visible on the right side of the simulation window. At the bottom, a control panel includes a 'g = -9.8j m/s²' label, a cursor position indicator (-1.05, -1.61), and a set of navigation buttons (back, forward, pause, etc.). The bottom right corner shows the simulation time: 'Time (T): 83.2sec'.

```
1 //theory refer to
2 //https://gamedevelopment.tutsplus.com/tutorials/
3
4 var canvas=Widgets.getCanvas("canvas");
5 ctx=canvas.getContext();
6 ctx.strokeStyle(0.8,0.8,0.9,0.8);
7 ctx.strokeStyle="blue";
8 // settings
9 var physics_accuracy = 3,
10     mouse_influence = 20,
11     mouse_cut = 5,
12     gravity = 1200,
13     cloth_height = 30,
14     cloth_width = 50,
15     start_y = 20,
16     spacing = 7,
17     tear_distance = 60;
18
19 var ctx,
20     cloth,
21     boundsx,
22     boundsy,
23     mouse = {
24         down: false,
25         button: 1,
26         x: 0,
27         y: 0,
28         px: 0,
29         py: 0
30     };
31 var Point = function (x, y) {
32
33     this.x = x;
34     this.y = y;
35     this.px = x;
36     this.py = y;
```


Teacher Training & Support

- Monitor school wise usage
- Provide targeted support and training
- Zone wise support groups
- Year round support for teachers and students



Conclusion

We at SimPHY believe high quality education tools must be accessible to everyone. And after years of trial and testing we have created SimPHY. To simplify, visualise and love Science. Every member of team SimPHY has studied and taught using SimPHY and we believe it to be a trailblazer among educational softwares that will revolutionise Science in High schools and Universities.

**Thank
You**

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