



## LEARNROLL IMMERSE IMMERSIVE CLASSROOM – LESSON PLAN TEMPLATE

Student		Class	
Instructor		Details	One-to-One mentoring class
Date			

### CLASS SUMMARY

Our goal for these classes is enquiry based learning which aligns with [NGSS /NJSLS\(NJ STATE\)](#) based curriculum. Our immersive classroom provides (non-lecture) based STEM learning where concepts can be connected to real world scenarios using various 3D, AR and VR based lessons, tools, experiences and assessments.

### HOW DO WE ALIGN TO NGSS?

#### ENGAGE - OBJECTIVES

1. Engage context of the lesson(s) by conveying key questions.
2. Engage students in enquiry /investigative thinking with a mentor
3. Engage interest in the topic(s) in an immersive environment.
4. Mentor will facilitate, prompt, observe and discuss with the student.
5. Students will collaborate, explore, measure /develop models and construct explanations.
6. Students and teachers can use our NSTA resources /books/magazines including external accredited resources.
7. NSTA Membership magazines are SCOPE, SCIENCE TEACHER

#### EXPLORE – EXPLAIN- ELABORATE OBJECTIVES

1. Develop knowledge and test Ideas using explanation, investigation and experiments.
2. Mini experimentation like PHET labs/NASA labs to test hypothesis or idea
3. Virtual AR or Leap lab

#### 4. VR Experience or Concept labs

### EVALUATE - OBJECTIVES

1. **Assess student understanding of concepts via questions or case studies**
2. **Claim-Evidence based reasoning, design and model**
3. **Quiz, 3D/AR/VR**
4. **Simulated Labs with Missions and ability to create lab reports**

### FEEDBACK

#### FEEDBACK AND COMMENTS

*Kindly add your feedback and comments in the section below about the class today so we can make each class engaging, personalized and cater to the student's learning objectives.*

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1. Did you enjoy the class today? Were the learning experiences helpful in understanding concepts?

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2. Do you have any specific expectation(s) from the class?

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3. Did you have any learning objectives that were not satisfied today?

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4. Do you like your mentor and discussions with your mentor?

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5. Were you comfortable in our learning center? Let us know if you were uncomfortable using any immersive devices? 3D, AR, and VR

## **SAMPLE CLASSROOM SESSION AND SCHEDULE**

### **MENTOR AND STUDENT 30 minutes**

*Mentoring – Student and Instructor are in a session where content will be previewed in 3D (video can be played based on student’s comfort level to understand and can be stopped in between for questions and quizzes) Students and Mentors can engage in free flow discussion on related topics and can narrate their own experiences about the concept – example a class note, research, cool fact or a myth.*

**Content Source – The content is provided and licensed from Designmate Pvt Ltd, India which is a production studio and 3D educational content creation company in India.**

**Technology – Projector Based 3D - (3D Stereoscopic using Active DLP Glasses)**

**Content - Simulations, Interactives and Quiz**

**Example Topics/Concepts (Physics)**

Scalars vs Vectors

Displacement Basics

Force, Velocity and Acceleration Basics

**3D will include below**

-Quiz

-Review additional videos or links (NASA, Discovery and other NGSS Resources)

**AR/VR/LEAP MOTION LABS - 15 minutes**

*Labs – Student will work on some sample hands-on LEAP Motion or AR Labs We may choose different labs based on the student’s level, interests and topics.*

*Example*

*LEAP MOTION VIRTUAL DISSECTION LABS*

*AR LABS (Designmate, Other 3<sup>rd</sup> Party), PHET Labs, VR Labs (Standalone – 3DOF)*

**VR EXPERIENCE LAB – 15 minutes**

Hands-on Lab and Experiments/Experiences

**Content Source – The content is provided and licensed from Labster Inc, from Europe which provides high end STEM labs to Universities and High Schools.**

*Worksheet – We do not believe in homework sheets as we believe he/she can learn and experience with the labs and other engagement techniques here. However, as our classes cannot cover the entire breadth and width of each topic in detail and these worksheets help you in self-assessment of certain concepts.*

## **LEARNROLL HIGH END CLASSROOM AND LABS FACILITIES**

### **LAB 1 – VR ROOM TRACKED –EXPERIENCES WITH HTC CONTROLLERS & LEAP MOTION HAPTICS**

This is a Lab area which provides access to **HTC Vive** in a Room Tracked Model. 6DOF allows students and teachers to move, walk around and interact with the experiences. This is powered using Alienware GTX 1080 Desktops and Curved Monitors

### **LAB 2 -VR -HANDS ON STEM LAB – WorldSense Tracking (NO PC)**

This is a Minimal Motion Lab area which provides access to Lenovo Mirage for hands on lab experimentation. This is a standalone VR device using Google Daydream.

### **LAB 3 – VR SEATED WITH OCULUS TOUCH AND LEAP MOTION HAPTICS**

This is a Lab area which provides access to Oculus Rift and Touch in a Seated and Limited Room Track Mode. 6DOF allows students and teachers to move, walk around and interact with the experiences. This is powered using Alienware GTX 1070 Desktops and Curved Monitors

### **LAB 4 – 3 DOF VR STANDALONE VR's (NO PC)**

This is a Minimal Motion Lab area which provides access to Oculus GO for hands on lab experimentation. This is a standalone VR device which also uses SAMSUNG GEAR Library

### **SAMSUNG GEAR – Available with Mobile (Mobile Enabled VR)**

100+ STEM TOPICS, ADVANCED BIOLOGY AND CHEMISTRY LABS (Coming Soon)

### **LAB 5 – AR Lab**

Our Current AR labs are enabled using Mobile Devices as below. We plan to provide high-end Headset based AR like Microsoft Hololens in future.

Current AR is enabled using Android, Apple iPhone (ARKit) and iPad

**CLASSROOM – 3D PROJECTOR WITH ACTIVE DLP – 500+ TOPICS (Physics, Chemistry, Biology).**

### **BUSINESS FIOS WITH 150 Mbps/s (Verizon 5G)**

**Note** -ALL VR Equipment usage is for ages 13+ and require signing a waiver. All 3<sup>rd</sup> party hardware and software equipment used are protected by individual trademarks and licenses and currently licensed/registered for use at LEARNROLL IMMERSE location only. Kindly go to their individual websites for individual terms of usage and privacy policies or safety guidelines.