NUKE Foundations
For internal reference only

Overview

The Nuke Classroom in a Box series is a collection of lesson plans, videos and exercise files meant to aid a teacher in the instruction of visual effects production using NUKE. Divided into Volumes and Chapters, the Nuke Classroom in a Box series is an excellent resource for preparing to teach students and professionals the art of Nuke compositing as it applies to live-action VFX, CG animation, and motion graphics.

This release of Classroom in a Box is a starting point for teaching the topics and information outlined in the structure. The content is designed to be read by the teacher and the concepts outlined, especially in the theory content, require teaching aids to be created. We are planning to create a V2 by Fall 2015 with some of the teaching aids included and a NUKE STUDIO update.

This content will enable us to grow the education business because:
- It significantly reduces the instructor learning curve
- Minimises direct Foundry resource requirement
- Reduces instructor knowledge to class introduction timeframe.

Assets

The Over the Moon Project

Included with these learning tools are all of the CG elements from a short film project entitled Over the Moon. This project was created by the students at Media Design School in New Zealand, and is based on the comic book character Connie Radar created by the Comic Book Factory. Education customers are permitted to use the assets with the written lesson plans and course structure. None of these assets can be redistributed for commercial gain, which would include marketing materials and demo reels.

A team of 15 students worked with faculty for over 23 weeks to create the 7 minute short film, which was primarily shot on greenscreen stages with limited props and sets. Students used Maya for CG, SynthEyes for matchmoving, Nuke for compositing, Premiere for editing, and Hiero for conform. This senior-level project was intended to tie together all the lessons the students had learned up to that
point and incorporate a great story into a signature portfolio piece. Numerous custom Nuke gizmos and image sources were used to standardize workflow and create a high-end look.

You can view the entire film on Vimeo https://vimeo.com/108943364. Over The Moon won the jury prize at Siggraph Asia.

Learning Outcomes

The Nuke Foundations materials are best suited for students new to digital compositing, especially in a node-based environment utilizing multichannel image sequences. To begin, we discuss the history and fundamentals of digital imaging, using Nuke as a learning tool. Students then learn the Nuke interface, and begin a series of tasks to achieve mastery of basic, node-and-channel-based script building. Tasks cover color correction, tracking, roto/paint, keying, and multipass compositing. As much as possible, each topic is focused on individually from the others so that new information can be grasped completely, in addition to repeating basic Nuke mechanics, namely channel-based data and the flow of image data through a node tree. Certain topics, such as distortion, the 3D environment, and deep compositing are touched on, and covered in more detail in later phases.

By the end of Volume 2, a student should have no problem creating a Nuke script to the basic tasks above, utilizing hotkeys and customized layouts as much as possible. Based on a breakdown of any new image sequence, they will be able to intelligently decide on a workflow and correctly insert and edit the associated Nuke nodes. They will understand the inner operation of these nodes, and based on that understanding, determine if their final output is the best it could be. If color changes, pixel degradation, image compression/clipping, and frame range changes are encountered, they will be able to troubleshoot them.

Volume 3 demonstrates topics a student would find helpful for accomplishing day-to-day tasks in a VFX or CG workflow. Building on the foundation knowledge of the Nuke interface and basic compositing scripts, the student will begin combining workflows to accomplish intermediate tasks, such as removing/reapplying camera artifacts (grain, lens distortion, flares), fixing stereo alignment, modifying problem mattes, creating animated and simulated elements, removing unwanted frame elements, and relighting existing CG rendered elements. Nuke's 3D environment, Dope Sheet, and scripting interface are taught in great detail in order for students to successfully accomplish these tasks. A wider variety of sample material is utilized to push the student's problem-solving ability. For animation students, rendered CG passes are modified to show the speed and efficiency of a pipeline that includes compositing.

By the end of this section, a student should understand that no script template can ever accomplish everything within a given image sequence. Instead, a compositor creatively combines basic operations to problem-solve a shot.
Future Classroom-in-a-Box

In future volumes of the Classroom in a Box, advanced topics such as automation with python, advanced 3D interchanges and channel data usage, script optimization, and efficient integration into a pipeline will be addressed. The focus is any technique in Nuke which is capable of assisting a busy student artist with a thesis project, which may or may not require working alongside other students and faculty.

FAQ

How much is Classroom in a Box?
The Foundation level content is free for institutions and teachers that have a valid education license.

Is it for students?
No, this content is meant for teachers and training providers. It is meant to aid teaching so parts of the lesson plans maybe used for class handouts and things like that but it is not meant to be given to a student for self directed learning.

How long is it?
The content was primarily targeted at higher education establishments so courses of a year or more rather than short professional courses. That doesn't mean that shorter course content can't be created from this and we anticipate this to be a building block from which shorter courses will be created. If you only taught the content we have produced we recommend a 12 week course duration plus a minimum of a month for personal projects demonstrating the skills and knowledge gained in the 12 week course.

Can I give it to prospects?
You can't give prospects access to the full files but you can send the outline NUKE Classroom in a Box TOC.pdf as well as an example lesson plan and video.

How can I get it to existing my education customers?
Were on the final round of beta testing, if you have customers that would like to join the beta program they can complete the beta request form: they must have a valid education license to join the beta program.

When and how is it going to be launched?
The files are large: NUKE is 3 download files that are nearly 900GB when zipped (lcp_nuke.zip - 9.61GB, images.zip - 249GB, over-the-moon-complete.zip - 639GB) so we have some infrastructure things to sort out such as where do we host it, how can we make it easy for the right people to
download and how do we protect it. The ops team and Nicki are working hard to get these issues resolved however accessing via the beta system is a good enough workaround for now and enables us to get it into peoples hands we just have to manage access. Once we've let the initial beta group – plus anyone you'd like to add access it and we know people are successfully downloading the files we will email our education database to let them know the content is available and hopefully that will drive leads and convert to more educational customers.

**Is there an authorized training program?**
Not at the moment but we are working on the outline for that.

**Are we planning to produce Classroom in a Box for any other products?**
We have Mari in beta. Modo is currently being developed and we hope to have a v1 beta by the Spring.

**Can I or my customers just use the assets?**
Unfortunately not. This has been a huge investment for The Foundry and we must all take care of this valuable content and accompanying assets.

**What do people think of the content?**
Bournemouth University which is regarded as one of the leading VFX schools in the UK think this type of material is essential - they've been teaching NUKE since 2010: Quote from Sofronis (Saf) Efstathiou, Postgraduate Framework Leader and BFX Competition & Festival Director Bournemouth University

"Generally this type of material is essential!!!! First off, it allows an educator to become quickly versed in all the intricacies of the software, whilst being able to reuse many of the assets. From experience (bearing in mind I am learning Maya at the moment, and it has a very poor Educators forum and material) it has taken over 6 months to become familiar with it to reach at any acceptable level. It will take another year before I (or others in the department) are competent in all areas. Fundamental concepts in Maya are rarely discussed – which becomes a problem.

Better material for educators means they are better prepared, more confident and more comfortable in the classroom when they come to deliver – therefore the student experience is much more enjoyable and students engage. That's a win win. There is a lot of Maya lectures online – it's very hard to identify what is good and demonstrates best practise, to that which is produced by a 16 year old or Novice. There is a lot of noise out there – and little quality control. Having The Foundry create content means that it's been tested for quality and fit for purposes."
Who created the content?

Linda Siegel, Project Manager
Linda has over 25 years of experience in both production and education development for Film and Animation. She has shot production experience as a compositor, lighter and simulations. Her film credits include Forrest Gump (compositing opening/closing feather shots), Mighty Joe Young (closing shot of gorilla running through grass), Pirates of the Caribbean (underwater pirate clothing simulation). Linda has been responsible for training and artist development at ILM, Image Movers Digital and Digital Domain. In these capacities, she has worked with a variety of subject matter experts and instructors to quickly develop production workflow curriculum for commercial as well as proprietary software.

Benoit Doidic, Project Manager and Nuke Instructor
Ben is an experienced studio trainer, curriculum developer, and visual effects artist. Although originally trained as a cinematographer, he found the world of post-production, specifically compositing, to be the source of “movie magic” that had got him interested in the film industry to begin with. His training career started when the post house In-Three needed to transition it's compositing teams from After Effects and Fusion to Nuke. Since then, training VFX artists has taken him around the world, organizing large scale training for artists in India for Reliance MediaWorks, artists at Digital Domain's feature animation division, and students at Florida State University's prestigious film school.

Brittany Drew, Mari Instructor
Brittany Drew is a Texture artist, 3D Modeler and Illustrator previous roles include Texture Painter / Surfacing - Bad Robot, Texture Paint TD - Rhythm & Hues, CG Artist - The Graphic Film Company, Matte Painter - Floq VFX / Day's End Pictures. Brittany was also the instructor for FXPHD's Mari 201 course and is a graduate of the Media Arts and Animation program from the Art Institute of Pittsburgh.

Who should I ask if I need any additional information?
Nicki Morris – nicki@thefoundry.co.uk