



## **LEGO CAD Software**

By Sanjay and Arvind Seshan



## **ROBOT DESIGN LESSON**

# WHY USE LEGO CAD SOFTWARE?

- **Can be an easy way to share your designs with others**
  - EV3Lessons shares many designs using LEGO Digital Designer (LDD)
- **Can help you document your designs and enable someone to create a duplicate of make repairs**
  - FIRST LEGO League and WRO teams often create their design in LDD for documentation purposes
- **Can be used to upload you design into some virtual robotics environments**
  - Tools such as Cogmation's Virtual Robotics Toolkit enable users to upload their own robot designs in a simulated environment

# LEGO DIGITAL DESIGNER

- There are many tools available for creating LEGO designs
- LEGO Digital Designer (LDD) is frequently used and free to download here: <http://ldd.lego.com/en-us/download>
- You can open .lxf files on EV3Lessons.com using this software

**LEGO DIGITAL DESIGNER** DOWNLOAD GALLERY SUPPORT

START BUILDING!  
DOWNLOAD **LEGO DIGITAL DESIGNER 4.3**

LEGO Digital Designer 4.3  
>> FOR MAC OSX <<

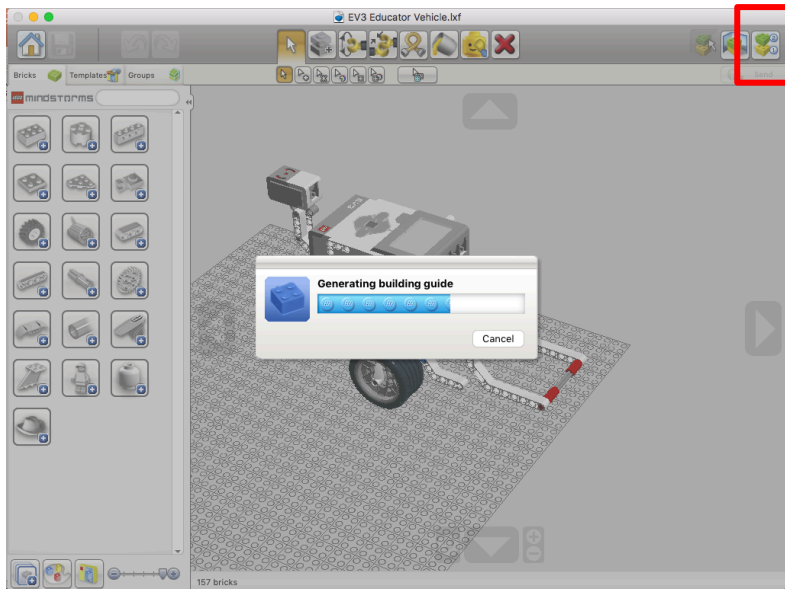
LEGO Digital Designer 4.3  
>> FOR WINDOWS PC <<

**MINIMUM SYSTEM REQUIREMENTS FOR MAC**  
Operating system: OS X 10.10 or higher  
CPU: Intel processor  
Graphics card: NVIDIA GeForce 5200/ATI Radeon 7500 or better  
RAM: 1 GB  
Hard disk space: 1 GB

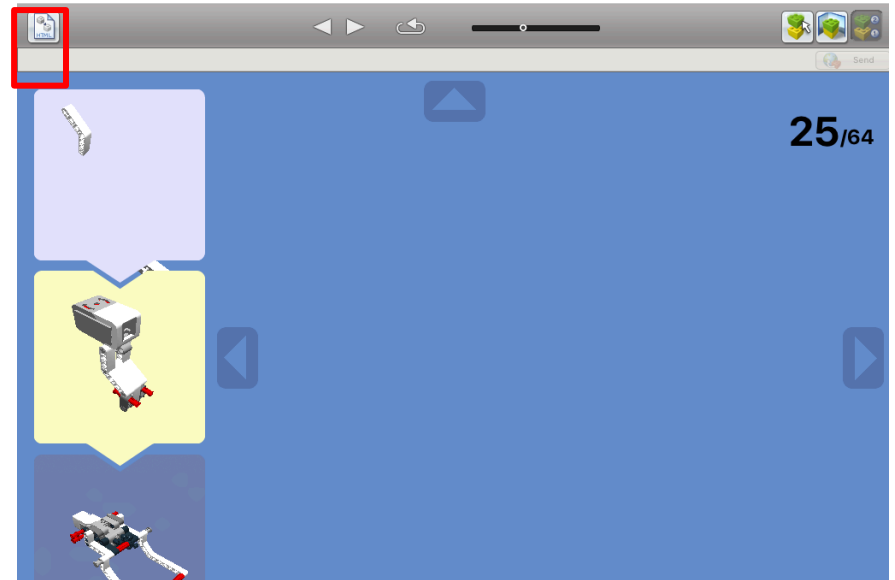
**MINIMUM SYSTEM REQUIREMENTS FOR PC**  
Operating system: Windows XP, Windows Vista, Windows 7, Windows 8 or Windows 10.  
CPU: 1 GHz processor or higher  
Graphics card: 128 MB graphics card (OpenGL 1.1 or higher compatible)  
RAM: 512 MB  
Hard disk space: 1 GB

# GENERATING HTML BUILDING GUIDE FROM .LXF FILES

Select Building Guide Mode Icon



Select HTML Icon

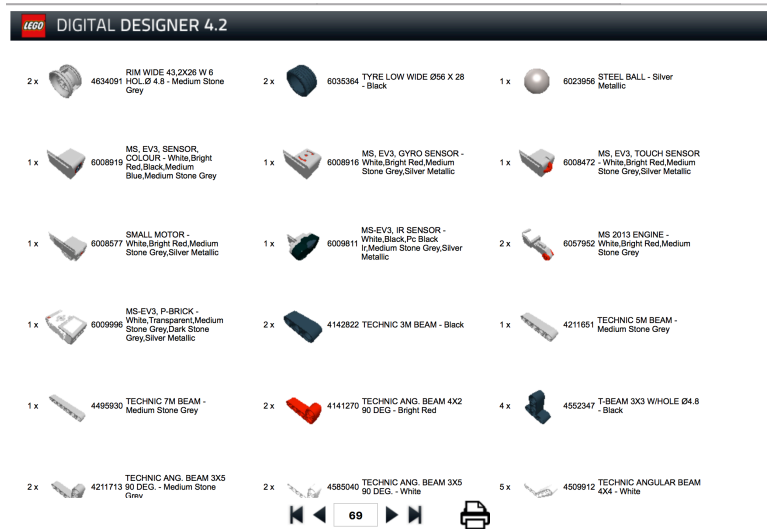
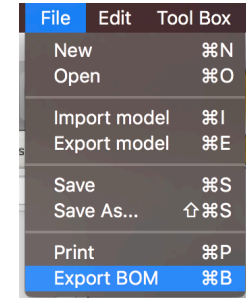










*Note: Building Instructions created by LEGO Digital Designer often don't make sense and cannot be customized*

# GENERATING A PARTS LIST

- The last page of the build instructions (HTML Building Guide mode) has a parts list

- Alternatively, you can select **Export BOM (Bill of Materials)** from the menu

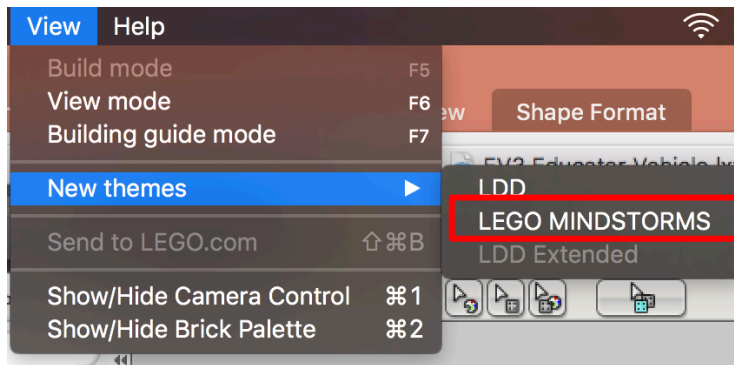


	A	B	C	D	E	F
1	Brick	Name	Picture	Part	Color code	Quantity
2	4634091	RIM WIDE 43,2X26 W 6 HOL.Ø 4.8		56908	194 - Medium Stone Grey	2
3	6035364	TYRE LOW WIDE Ø56 X 28		41897	26 - Black	2
4	6023956	STEEL BALL		99948	315 - Silver Metallic	1
5	6008919	MS, EV3, SENSOR, COLOUR		95650	194 - Medium Stone Grey, 1 -	1
6	6008916	MS, EV3, GYRO SENSOR		99380	194 - Medium Stone Grey, 1 -	1
7	6008472	MS, EV3, TOUCH SENSOR		95648	194 - Medium Stone Grey, 1 -	1
8	6008577	SMALL MOTOR		99455	21 - Bright Red, 194 - Medium	1
9	6009811	MS-EV3, IR SENSOR		95654	194 - Medium Stone Grey, 1 -	1

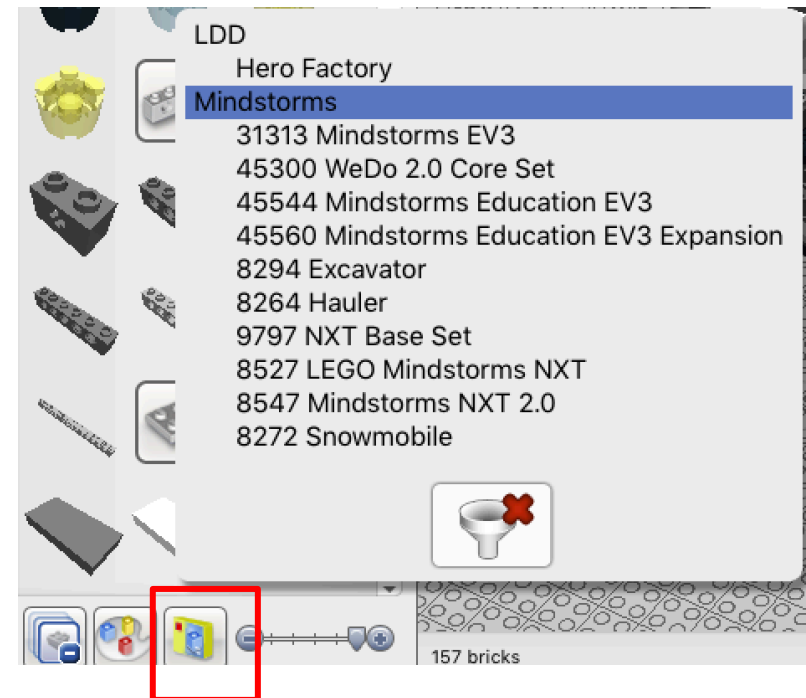
# USING LDD TO CREATE MINDSTORMS DESIGNS

TIP #1: Filtering will help you find MINDSTORMS-related parts quickly

**Step 1: File → View → New Themes Select MINDSTORMS**



**Step 2: Bottom Left corner: Select “Filter Bricks by Boxes” and then select which MINDSTORMS kit you want to use.**



# USING LDD TO CREATE MINDSTORMS DESIGNS

TIP #2: Read the Support Manual which can be downloaded at <http://ldd.lego.com/en-us/support>

**LEGO DIGITAL DESIGNER**

LOOKING FOR ASSISTANCE?  
WELCOME TO OUR **SUPPORT PAGE**

**DOWNLOAD** **GALLERY** **SUPPORT**

**LDD USER MANUAL**

**CONTACT INFORMATION**  
To get help using LEGO Digital Designer, go to our Customer Service site by clicking the button on the right.

**CUSTOMER SERVICE**

**FAQ - FREQUENTLY ASKED QUESTIONS**

**WHERE'S MY FILE?**  
How can I find my building guide...

**IMPORTANT NEWS**  
You CAN NO longer order your models!

Privacy Policy Co

# LOTS MORE TIPS & TRICKS

## Virtual Robotics Toolkit Introduction to LDD Videos:

[https://youtu.be/F0bunR-iBHU?list=PLH3wHnw9b170XP7HkZ6wc-FNI\\_7kxZOyo](https://youtu.be/F0bunR-iBHU?list=PLH3wHnw9b170XP7HkZ6wc-FNI_7kxZOyo)

[https://youtu.be/-laTwfQXmY0?list=PLH3wHnw9b170XP7HkZ6wc-FNI\\_7kxZOyo](https://youtu.be/-laTwfQXmY0?list=PLH3wHnw9b170XP7HkZ6wc-FNI_7kxZOyo)

## Isaac Lloyd Tips & Tricks Videos:

<https://youtu.be/X4c7Q0W4cDI>

<https://youtu.be/p-UBj76eEGA>



# LIMITATIONS WITH LDD

- 1) **Build instructions generated by the software often seem out-of-order and do not make sense**
- 2) **Build instructions cannot be customized**
- 3) **Sometimes builds that work in the real world are not permitted in the LDD environment**
- 4) **Pneumatics, rubber bands and other elements often cannot be connected and placed correctly**

# OTHER LEGO CAD SOFTWARE

**LDCad: <http://www.melkert.net/LDCad>**

**MLCAD: <http://mlcad.lm-software.com/>**

**LeoCAD: <http://www.leocad.org/trac>**

# CREDITS

- This tutorial was created by Sanjay Seshan and Arvind Seshan
- More lessons at [www.ev3lessons.com](http://www.ev3lessons.com)



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/).