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## HOW TO BUILD THE MOON SCHOOL ROOM BOARD



**The Moon Schoolroom Board** is used by some of the UK's top climbers including Malcolm Smith, Ben Moon and Rich Simpson. Building this board and fitting it with a set of Moon holds you will be able to train on exactly the same problems these guys are working on. We will be uploading new problems as we change our own board sign up for our news letter and we'll keep you posted.

Building a Moon board is a fairly simple job, however you will need basic carpentry skills, Basic tools (see page 2) and a minimum of two people. The information here is just a guide to how we built our board, however it may vary a great deal depending on your surroundings and its structure. It isn't necessary to support your moon board exact to ours, but it is essential that you use the same measurements for the angle of the board, height, width and T nut spacing etc.

If you have any doubts regarding your board and its structure please seek professional advice. Whilst our information worked for us, we cannot accept responsibility if your board becomes unstable or dangerous.

Let us know how you get on, happy climbing!

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## HOW TO BUILD THE MOON SCHOOL ROOM BOARD

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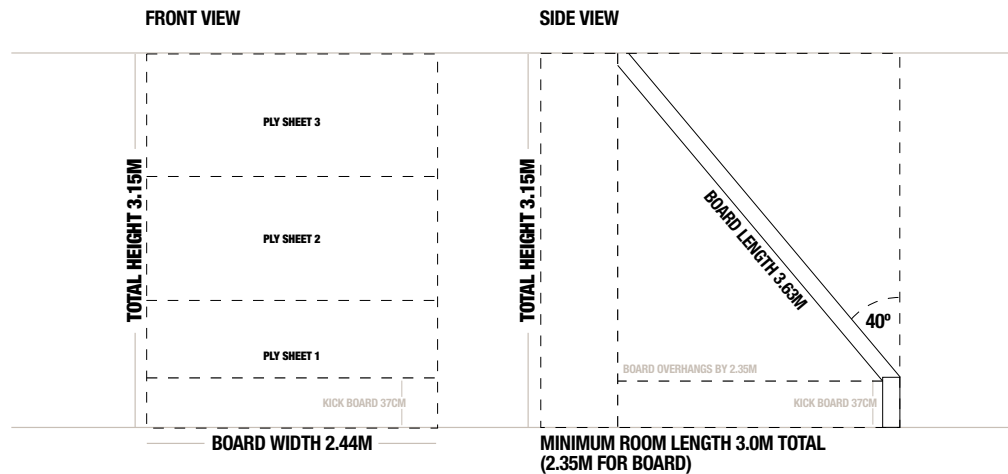
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## HOW TO BUILD THE MOON SCHOOL ROOM BOARD

### 1. AREA REQUIRED - SEE FIG.1



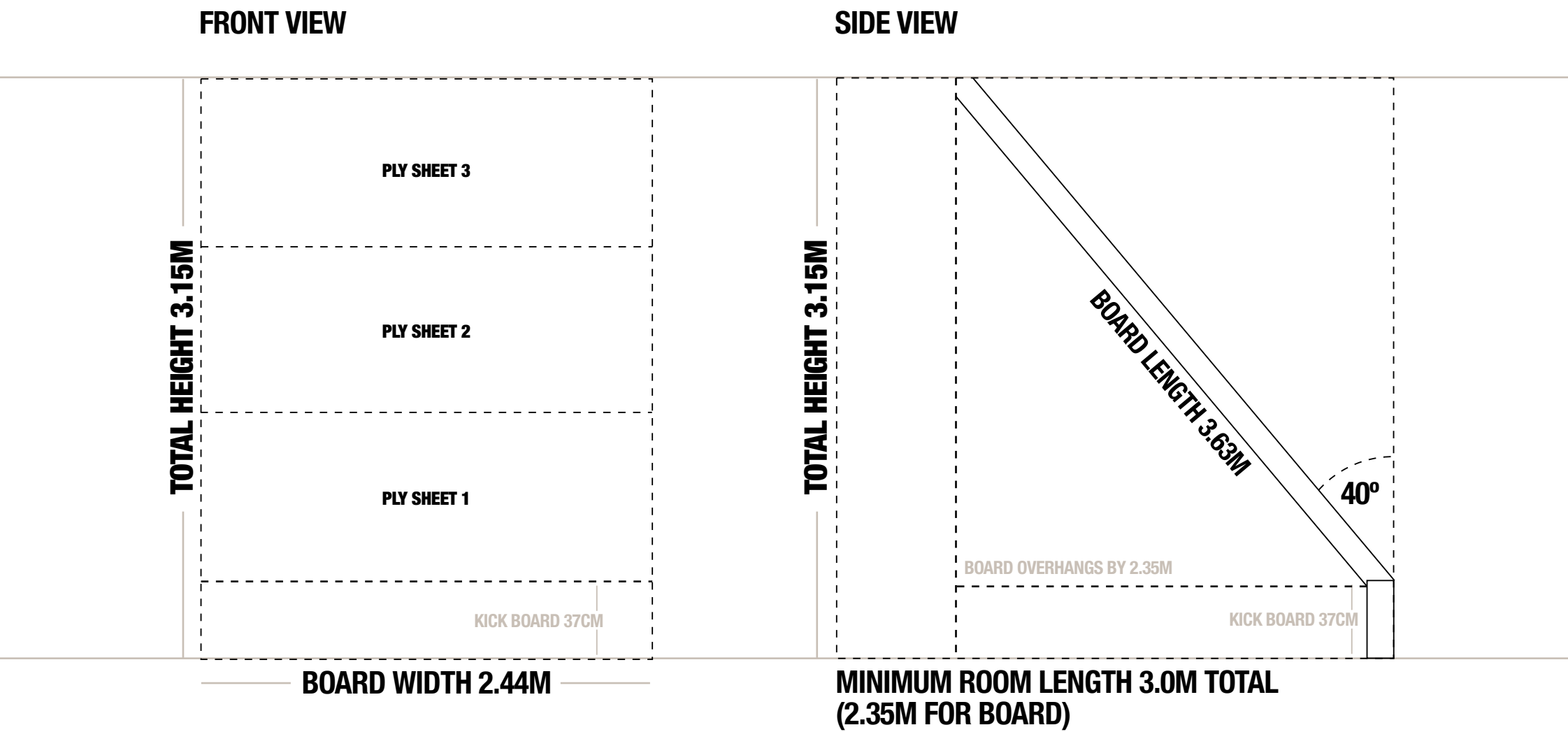
#### See fig.1 for overview of Area and board

To build a full Moon board, exact to the one in Sheffield's School Room, you will need a minimum area of:

- 3.15m High
- 2.44m Wide
- 2.35m Deep (for board) although an extra metre or 2 will be needed for space to fall off and rest etc.

However it may be possible to still build a smaller moon board in the space you have, by shrinking our measurements to suit your area. Although we cannot guarantee that you will be able to replicate all of our downloadable problems there still should be many possibilities, even if you can only replicate the first few moves of our full problems.

FIG1. AREA REQUIRED / BOARD DIMENSIONS



## 2. MATERIALS AND TOOLS

### Materials

The Materials required to build a full Moon board are as follows

- 3 plywood boards 18mm thick and 8ft high by 4ft wide
- 1 plywood sheet 8ft wide, by 37cm high for the kickboard
- 4 x 2inch by 4inch rough sawn timber 3.63m for framework
- 2 x 2inch by 4 inch rough sawn timber 8ft long for kickboard
- 200 x M10 T-nuts
- Approximately 100 wood screws minimum of 1.5 inch long
- Moon School Room Holds

This is just a guide for our moon board, however depending on your venue and its structure you may need extra materials to attach framework to wall or ceiling. If you are unsure about the buildings structure and how to attach your framework seek professional advice.

### Tools

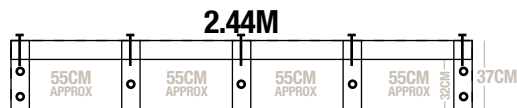
The following tools are basic essentials for building a moon board

- Tape Measure
- Pen
- Saw
- Screw driver
- Drill
- Hammer

However for easier and quicker building, power tools such as mitre saws, circular saws, electric screw drivers / drills will come in very handy.

### 3. BUILDING THE KICK BOARD - SEE FIG.3

FRAME FOR KICKBOARD



PLYWOOD SHEETS WHICH COVER FRONT OF KICKBOARD

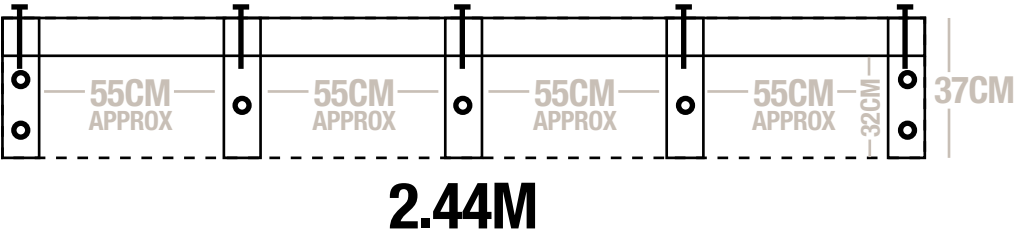


Although the kickboard is fairly simple to build, it is important that it is solid and attached to either a brick wall or screwed into the floor, as the main framework will sit on top to the kickboard. Our kickboard was built up against a wall therefore we screwed through the frame into the wall joists, which meant it was attached firmly. However if you are not able to fix your kickboard to a wall at the rear, it may be possible to screw down into the floor.

- We first of all built the kickboard frame using rough sawn 3 inch by 2 inch timber, See drawing 3a for measurements and assembly details.
- Secondly we cut a sheet of 18mm plywood, down to size, and attached our T-nuts in the required position as in picture 3b. We then screwed our T-nutted plywood sheet into the framework which resulted in a completed kickboard.

FIG.3 THE KICK BOARD

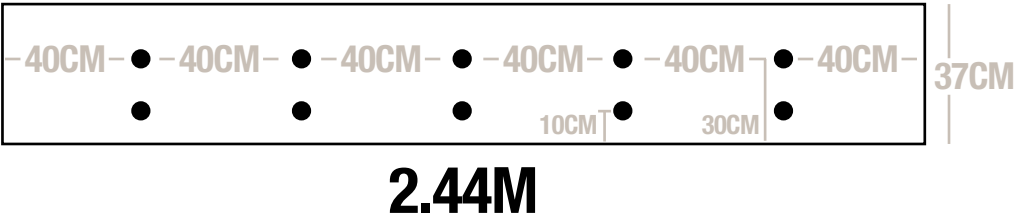
FRAME FOR KICKBOARD



- = SCREWS OR BOLTS INTO WALL
- └ = WOOD SCREWS

FRAME BUILT FROM 3BY2 ROUGH SAWN TIMBER

PLYWOOD SHEETS WHICH COVER FRONT OF KICKBOARD



- = T-NUTS

T-NUT SPACING

1ST ROW: 40CM INTERVALS FROM EITHER SIDE,  
10 CM UP FROM BASE

2ND ROW: 40CM INTERVALS, 30CM FROM BASE

### 4. MAIN FRAMEWORK - SEE FIG.4

The main framework was constructed out of 2 inch by 4 inch rough sawn timber. Again the framework design may need to be altered slightly depending on your building structure and how you are attaching the framework.

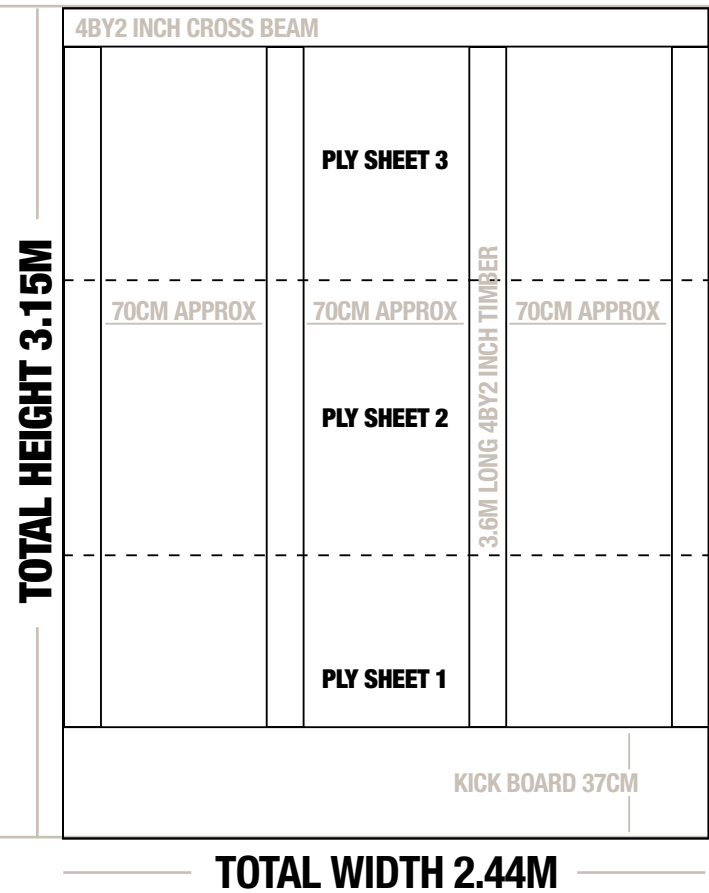
- a) Cut 4 lengths of timber to 3.7m and using a mitre saw or protractor cut the bottom of the timber to a 40 degree angle.
- b) Fix the top beam to either the ceiling or sidewalls running across the width of the board from a distance of exactly 1.8m from your kickboard and a height of 3.15m from the ground. This will enable the correct board angle to be achieved.
- c) Fix your 4 timber struts from the top of your kickboard into the main top frame, at variable intervals throughout the width of the board.
- d) Fix another 2 inch by 4 inch timber along the top of the board approximately 75cm away from your kickboard and again 3.15m from the ground.
- e) Fix two down pieces from your top strut down the middle 2 frame pieces.

You should now have a solid framework, although depending on your climbing area more attachments may need to be made into either sidewalls or ceiling joists.

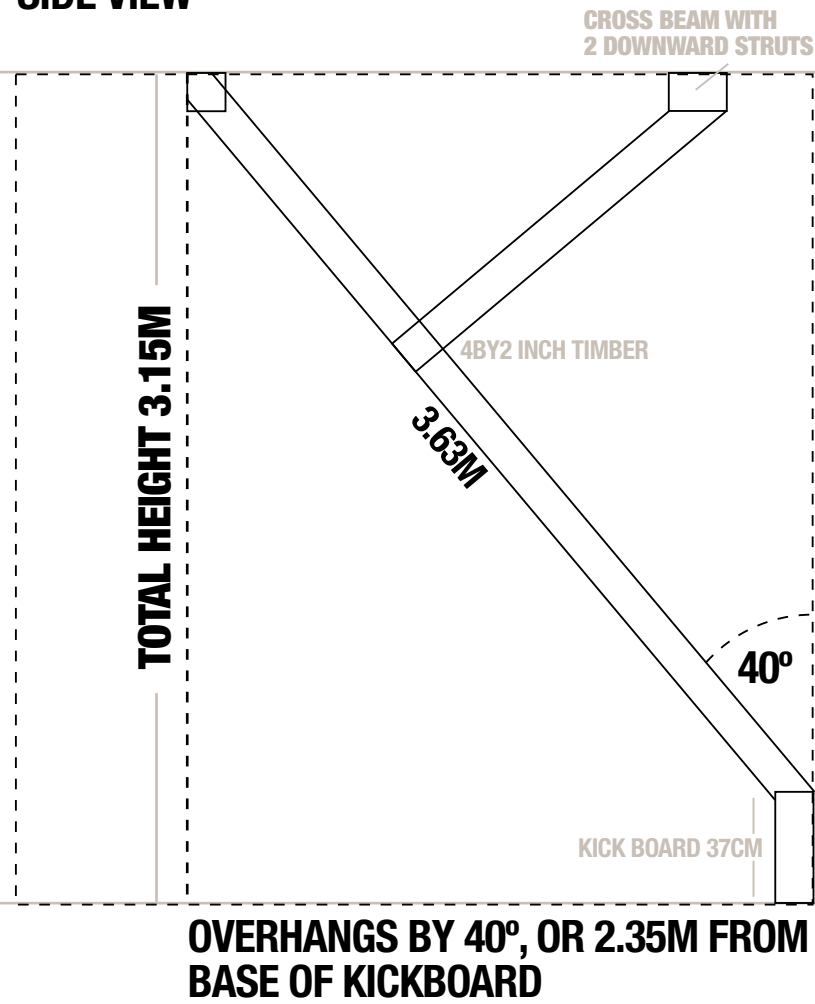


FIG.4 MAIN FRAMEWORK

FRONT VIEW



SIDE VIEW



## 5. T-NUTTING THE 3 PLYWOOD BOARDS - SEE FIG.5



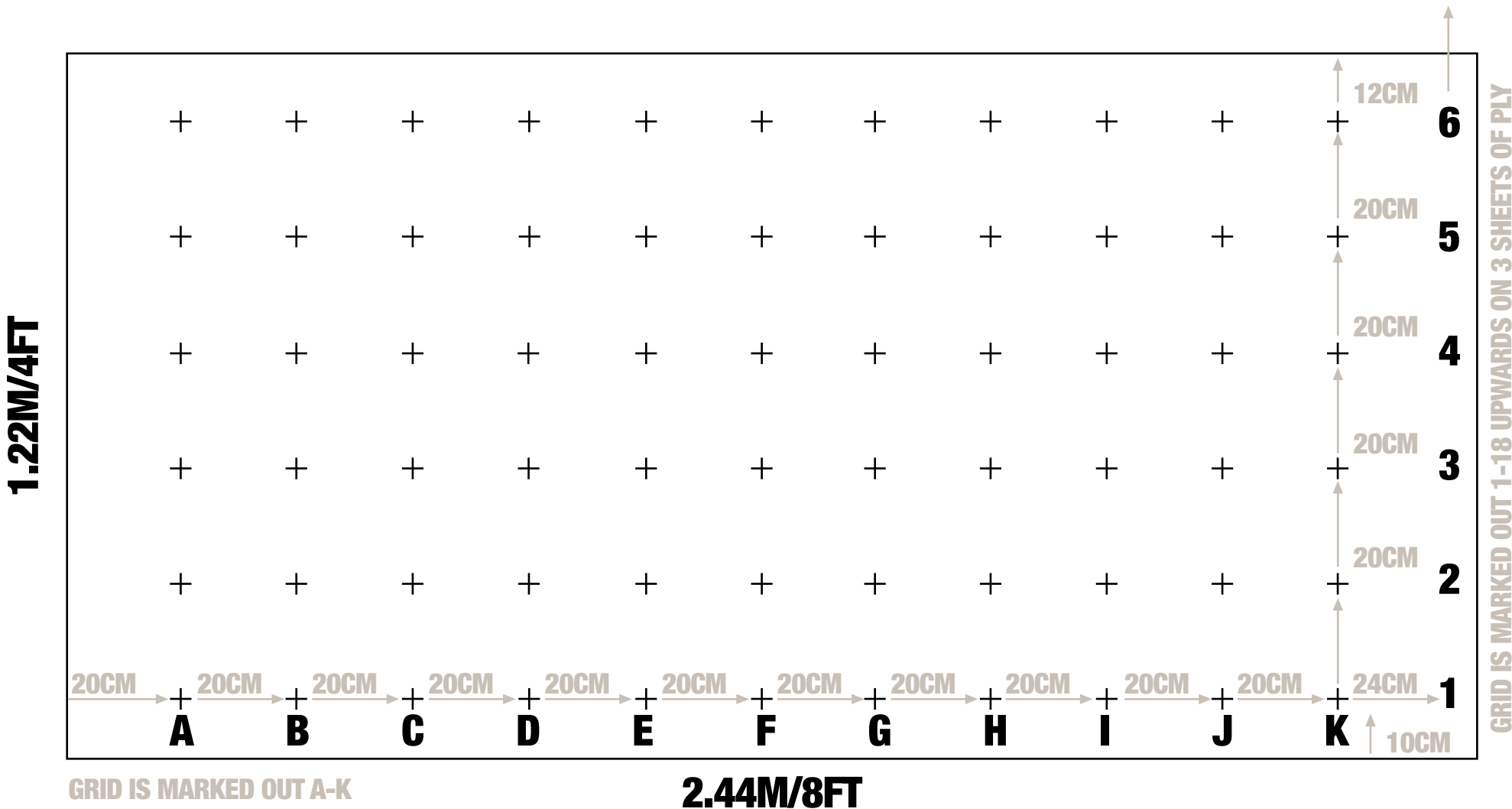
| 2.44M/8FT |   |   |   |   |   |   |   |   |   |   |    |
|-----------|---|---|---|---|---|---|---|---|---|---|----|
| 1.22M/4FT | + | + | + | + | + | + | + | + | + | + | 18 |
|           | + | + | + | + | + | + | + | + | + | + | 17 |
|           | + | + | + | + | + | + | + | + | + | + | 16 |
|           | + | + | + | + | + | + | + | + | + | + | 15 |
|           | + | + | + | + | + | + | + | + | + | + | 14 |
|           | + | + | + | + | + | + | + | + | + | + | 13 |
| 1.22M/4FT | + | + | + | + | + | + | + | + | + | + | 12 |
|           | + | + | + | + | + | + | + | + | + | + | 11 |
|           | + | + | + | + | + | + | + | + | + | + | 10 |
|           | + | + | + | + | + | + | + | + | + | + | 09 |
|           | + | + | + | + | + | + | + | + | + | + | 08 |
|           | + | + | + | + | + | + | + | + | + | + | 07 |
| 1.22M/4FT | + | + | + | + | + | + | + | + | + | + | 06 |
|           | + | + | + | + | + | + | + | + | + | + | 05 |
|           | + | + | + | + | + | + | + | + | + | + | 04 |
|           | + | + | + | + | + | + | + | + | + | + | 03 |
|           | + | + | + | + | + | + | + | + | + | + | 02 |
|           | A | B | C | D | E | F | G | H | I | J | K  |

Due to the systematic design of the Moon board it is essential that the T-nuts are drilled and placed in the correct place so that your T-nutted grid design is exact to ours, which will then allow problem setting to be straightforward and exact.

To allow the 3 plywood sheets to be drilled exact we clamped our sheets together on top of each other, this also saves time when drilling through and marking the sheets. We then marked the top sheet ready to drill 10 mm holes straight through, which is where we would place the T-nuts.

Once we had drilled out holes through the 3 sheets, we then hammered the T-nuts into each hole on the back of the plywood sheets, i.e. the opposite side to which you will climb on. The T-nuts should be held firmly into the plywood sheets, by just hammering.

### FIG 5. BOTTOM OF 3 BOARDS/DIMENSIONS & OVERVIEW



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## HOW TO BUILD THE MOON SCHOOL ROOM BOARD

### 6. FIXING PLYWOOD SHEETS TO FRAMEWORK



Once all the sheets have been drilled and T-nutted, they will then be ready to be screwed up onto the framework.

**Note\*** It's important that the first sheet is placed downwards, so that the first row of t nuts start at 10 cm up and also that the T-nuts are onto the back of the board.

It is also important that the T-nuts are not covered up by the framework; if this is the case it may be necessary to move the offending piece of framework a few inches to one side.

We fixed our sheets up to the framework by using several 1.5 inch screws and an electric screw driver. We screwed straight through the plywood and into the rough sawn framework several times for each plywood sheet.

# 7. MARK OUT THE GRID & SET UP YOUR PROBLEMS



|           |   |   |   |   |   |   |   |   |   |    |
|-----------|---|---|---|---|---|---|---|---|---|----|
| 2.44M/8FT |   |   |   |   |   |   |   |   |   |    |
| 1.22M/4FT | + | + | + | + | + | + | + | + | + | 18 |
|           | + | + | + | + | + | + | + | + | + | 17 |
|           | + | + | + | + | + | + | + | + | + | 16 |
|           | + | + | + | + | + | + | + | + | + | 15 |
|           | + | + | + | + | + | + | + | + | + | 14 |
|           | + | + | + | + | + | + | + | + | + | 13 |
| 1.22M/4FT | + | + | + | + | + | + | + | + | + | 12 |
|           | + | + | + | + | + | + | + | + | + | 11 |
|           | + | + | + | + | + | + | + | + | + | 10 |
|           | + | + | + | + | + | + | + | + | + | 09 |
|           | + | + | + | + | + | + | + | + | + | 08 |
|           | + | + | + | + | + | + | + | + | + | 07 |
| 1.22M/4FT | + | + | + | + | + | + | + | + | + | 06 |
|           | + | + | + | + | + | + | + | + | + | 05 |
|           | + | + | + | + | + | + | + | + | + | 04 |
|           | + | + | + | + | + | + | + | + | + | 03 |
|           | + | + | + | + | + | + | + | + | + | 02 |
|           | A | B | C | D | E | F | G | H | I | 01 |

To enable you to replicate our problems, we have used a simple grid. This determines what T nuts should be used for each hold. Our grid used letters along the width of the board, in our case from left to right we went A to K, and numbers going up the board, in our case from bottom to top, 1 to 18.

To exactly replicate the problems we are training on you will need to use holds from the Moon School set. You can find these in the Bolt on Holds section of our website. The full set of School holds contains 40 hand holds and 20 footholds. All the Moon holds are numbered and have an orientation mark to indicate which way up each hold shuld go. Our Problem guide will incicate the hold rotation using compass directions: N / NE / E / SE / S / SW / W/ NW. The guide will also list the hold number and grid location.

Your moon board should now be built and ready to be climbed on, all you need to do now is download some boulder problems and set them on your board. It is also possible to randomly scatter some holds around your board which will enable you to make some new problems up. Let us know how you get on.

Enjoy and be strong.