EVA Foam Modular Wargaming Board

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There are many options for a gaming surface to be used for tabletop wargaming. Printed or textured mats are among the simplest of choices while at the upper end some gamers may have a dedicated wargaming table. A modular gaming board uses individual board sections that fit together to create a larger playing surface that can be customised according to the game being played and the purpose of these instructions is to show how one can be made.

Modular game boards can be made of a variety of materials with mdf sheets being a popular choice. However, these can be heavy and to prevent the tiles from moving out of position some method of securing them together is needed.
This project gets around both of these issues by using floor tiles made from EVA foam. These are lightweight and have a dovetail pattern around the edges that allow them to be fixed together. In addition EVA foam is resistant to chemicals such as glue and spray paint so these can be used without risking melting the tiles. EVA foam floor tiles are available in different sizes but these instructions will use only the 24”/60cm sized tiles.
In addition to plain tiles, the construction of tiles with some fixed terrain features will be covered.

Materials.

Plain tiles.
EVA foam floor tile.
PVA glue.
Coarse sand (or flock).
Paint.

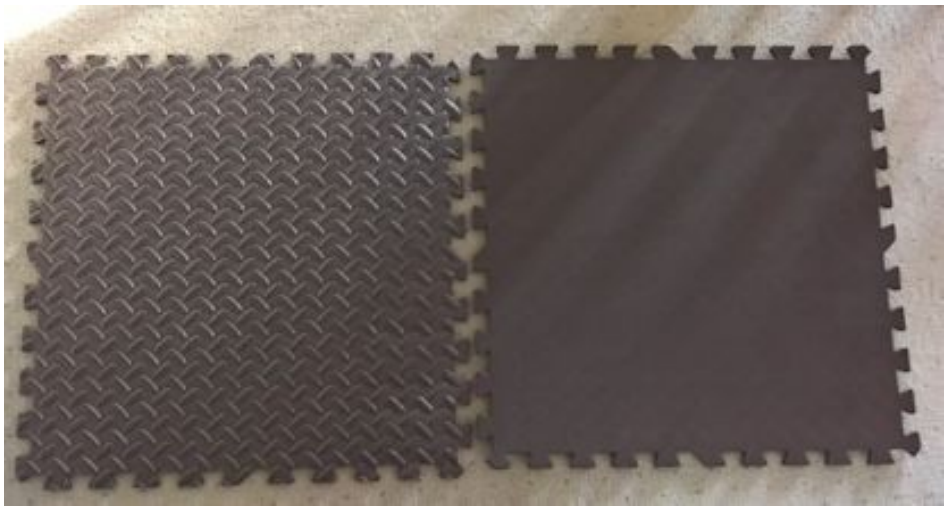
Road tiles.
EVA foam floor tile.
PVA glue.
Coarse sand (or flock).
Paint.
Thin card.

Track tiles.
EVA foam floor tile.
Extra EVA foam strips.
PVA glue.
Coarse sand (or flock).
Fine sand.
Paint.

River tiles.
EVA foam floor tile.
Extra EVA foam strips.
PVA glue.
Coarse sand (or flock).
Toilet paper.
Paint, including dark and light blue paint for the river itself.
Gloss varnish.

Making Plain Tiles.

Plain tiles are the easiest to make. EVA foam floor tiles typically have a textured upper surface for grip when walked on and instead of attempting to remove this the tile should be turned over to the flat underside.



Both sides of EVA foam floor tiles.

This flat surface should be covered in PVA glue so that coarse sand can be scattered over the entire surface.
The tile is then left for the PVA glue to dry.

A plain tile covered in sand.

Once the glue is dry the tile can be painted. It is recommended to use spray paint for a base layer instead of a brush. After this a contrasting colour can be dry brushed over the sand if desired to complete the tile.

A painted tile.

An alternative to sand is to use flock scatter to cover the tiles. If this is being done then the bare tile should be painted a similar colour to the flock before being coated with PVA glue and the flock applied.

A Note About Terrain Tiles.

Tiles that have terrain features such as rivers, roads and tracks need to be able to be placed together so that these features line up between tiles. The best way to achieve this is to locate all terrain features that run off the edge of a tile centrally. However, the irregular shaped edges of the tiles intended to lock them together mean that measuring this out can be difficult.
The best way to get around this is to cut a length of paper (newspaper is good for this) that stretches across the tile excluding the dovetail protrusions. This should be folded in half to locate the exact centre and measurements can be made on this to create a template which can in turn be placed over the floor tile.

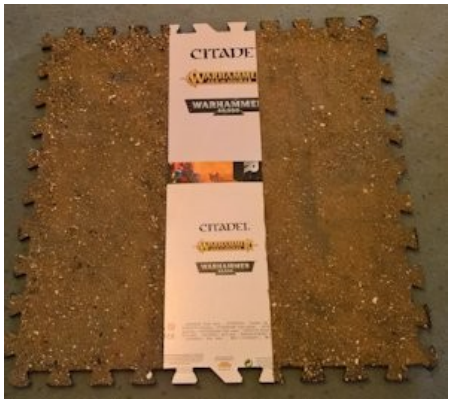
A paper strip used for easy marking of points along the edges of tiles.

Making Road Tiles.

Road tiles are the simplest of the terrain tiles in these instructions. After deciding how wide the road is to be lengths of thin cardboard this wide should be cut and glued to the flat side of the tile. Printed card should be used and glued down with the printed side up using super glue. This will help prevent warping when the tile is painted later.
Because of the shape of the tile the ends of the road will overhang parts of it. These should be trimmed to match the exact shape of the tile to prevent catching when connected to other tiles.

Lengths of card for roads (left) and glued down the centre of a tile (right).
Note the trimmed card at one end of the road to match the contour of the tile.

Once the road has been fixed down the rest of the tile should be covered in sand in the same way as a plain tile. When painting the sanded areas should be painted to match plain tiles while the road should be given a dark grey or black colour.



A road tile covered in sand (left) and painted (right).

Making Track Tiles.

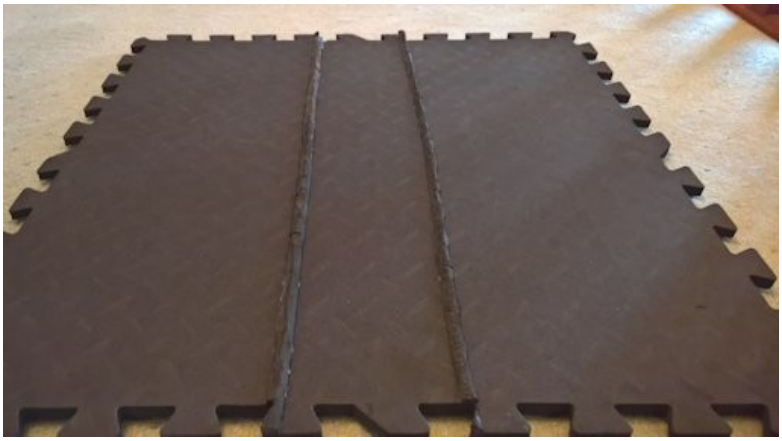
Tracks require a raised edge to separate them from the ground either side. These can be made by cutting strips of EVA foam from the edging pieces supplied with the floor tiles intended to let them fit against a wall. These can be cut with a knife or scissors.

A foam edging piece alongside a strip cut off this.

These strips should be angled along their entire length to make them look more natural.

A close up view of a foam strip that has been angled for a more natural look.

These are then glued to the main tile to mark out the path of the track. The foam will be flexible enough that it can be used to mark out bends in the track if wanted.



Foam strips glued down to mark out the edge of a track. Note how these have been trimmed to match the edge of the tile.

With the path of the track marked out the ground either side, including the foam edge markers are coated in coarse sand and then left to dry. Only once the glue is dry is the track itself covered in PVA glue and fine sand scattered over it.


The terrain either side of the track coated with sand (left) and then the track coated with a finer grain of sand (right).

When the track is dry it can be painted with a pale brown/sand colour.

A painted track tile.

Making River Tiles.

The banks of rivers are marked out in the same way as the sides of tracks are but they should be more irregular.

River banks marked out with EVA foam strips.

After the ground either side, including the banks have been covered with sand the river texture itself can be applied. It is not necessary to wait for the PVA glue holding the sand down to dry first.
The river texture is made from toilet paper stuck down with PVA glue so that it produces a ripple effect before being left to dry.

The texture applied to the river using toilet paper stuck down with PVA glue.

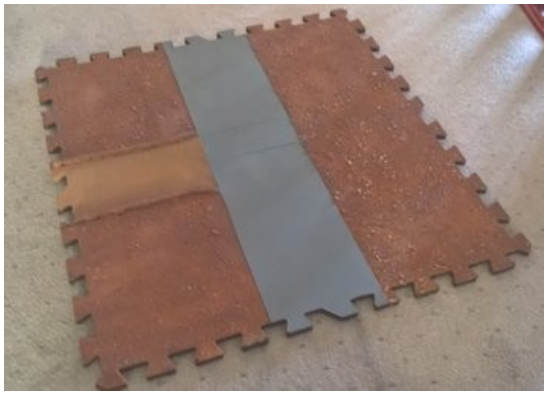
Once dry the textured toilet paper is painted, staring with a dark blue base coat. The sides of the water and ripples are then picked out with a lighter blue before the entire water surface is given a coat of gloss varnish.

River tiles with basic blue coat (left) and detailed and varnished stages (right).

Making Mixed Tiles.

Different types of fixed terrain can be used on the same tiles, in which case they require a means of interfacing them.

The easiest of these is a junction from road to dirt track. In this example the dirt track spurs off from the main road.



A dirt track leading off from a road.

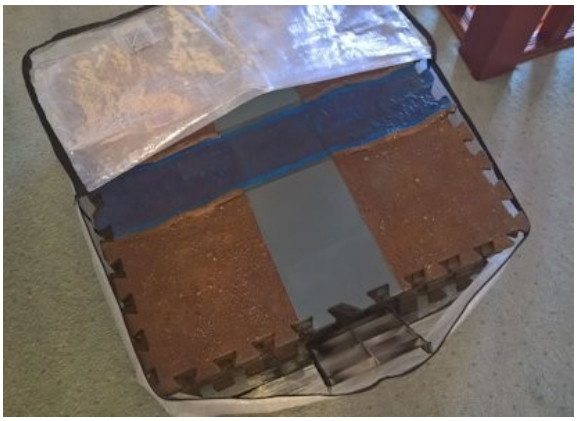
A variety of bridges can be built to provide river crossings for both roads and tracks. The length of river beneath the bridge such not be coated in toilet paper but it should still be painted in a similar way. This enables the bridge model to be placed onto the tile and removed if it is considered destroyed.

A plasticard bridge for a road crossing.

A bridge for a dirt track crossing made from balsa wood.

Storage of the Game Board.

The EVA foam tiles fit neatly into a bag meant to hold a car tyre. A set of sixteen such tiles can be stored and easily transported in one bag.




The game tiles shown in a bag for storage and transport.