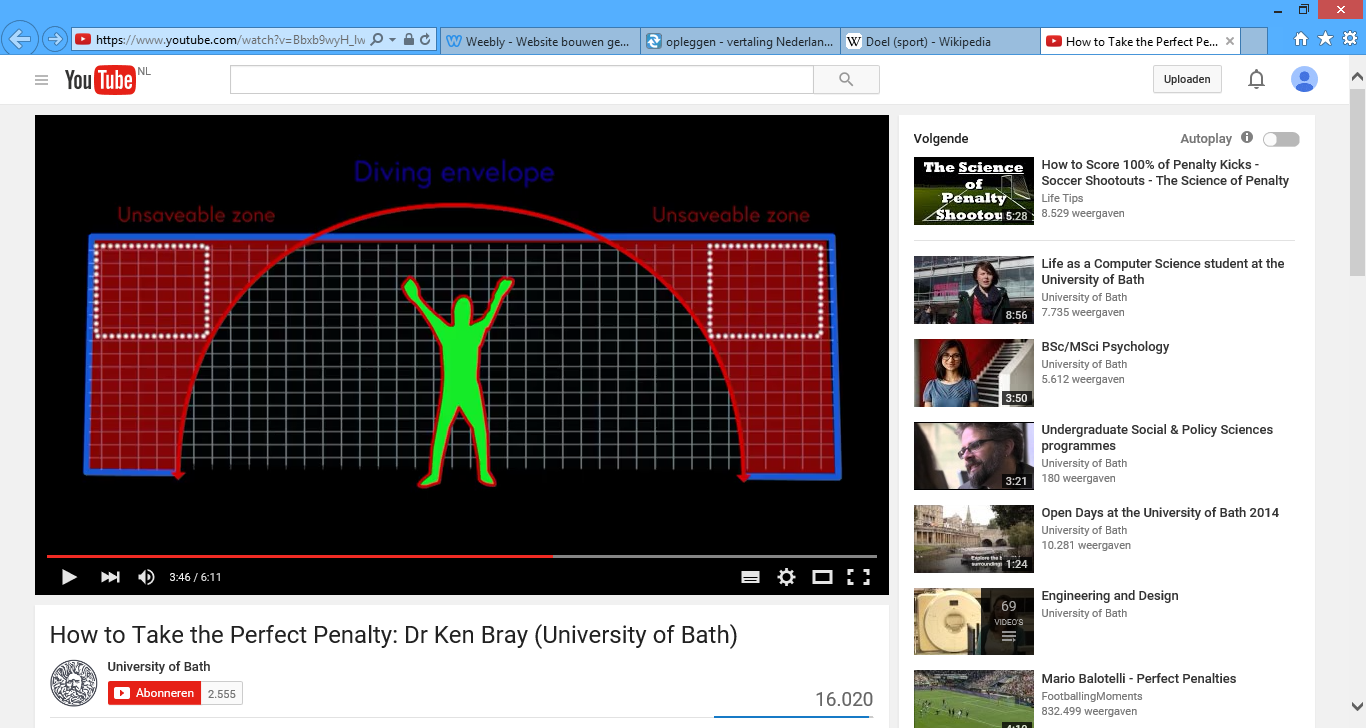
How Maths can help you with scoring or saving a penalty.

*Everyone who plays football knows the feeling when you have to take a penalty. If you miss, you may be out of the tournament. If you score, you are the hero. The pressure rises and you place the ball on the penalty spot. You get ready for your shot. The goalkeeper tries to make you hesitate. The referee blows his whistle, and you just go for it.*

Penalties matter in football. They can give you a chance to decide the game, or get back into the game. The principles are simple. When someone is fouled inside the penalty box, the referee has to give you a penalty. A player can kick the ball, from the penalty spot onto the goal, without a defender that can block the shot. Only the goalkeeper can keep the ball out of the goal. The penalty spot is located 11 meters away of the goal (12 yards). A football goal is 7.32 meters in with and 2.44 meters in height.

We are going to give you some hints which will increase the chance of scoring and saving a penalty.

How to have the biggest chance of scoring a penalty:

1. Choose the wright person to take the penalty. Not every player is as good as others. The one who has the best placed shot, and doesn’t get nervous is the perfect player to take a penalty.
2. Decide how you will take the penalty. You have to know some basic things for this. The goal can be divided into two imaginable parts. The ‘diving envelope’ and the ‘unsaveable zone’. The diving envelope is the area a goalkeeper can reach with his fingertips. The bigger the keeper, the bigger the diving envelope is. When a keeper has good and fast reflexes, the diving envelope will become bigger as well. The unsaveable zone is the area outside the diving envelope. The small rectangles in the upper corners show the place for the optimal placement for the shot. If you shoot the ball into the unsaveable zone, your penalty will be scored. If you shoot your penalty into the ‘diving envelope’, the chance of scoring is only 50%.
3. Make sure your run-up isn’t too long or too short. Take a run-up of around 1.5 meters. This will give you enough speed.
4. Make sure you are focused and not stressed. Stress will increase your heartrate and you will get negative thoughts of taking the penalty.

With these hints you will be able to increase your chance of scoring a penalty. This doesn’t mean all penalties you take will go in.

How to have the biggest chance of saving a penalty:

Saving a penalty is different from taking a penalty. As a goalie, you are dependent on the way in which the striker takes the penalty. But there are some hints that can help you expecting where the player will shoot the ball and how to increase your save rating.

1. Every player in the world, even the best ones, have the favorable place to shoot the ball. If you make sure you know the favorite corner of the striker, you will increase your chance of diving into the correct corner, or stay where you are.
2. Look at the angle in which a player walks towards the ball. If the angle between the ball and the player is large, the player will not be able to shoot in the corner his run-up starts.
3. When a player kicks a ball, he will always put one foot beside the ball. This foot will point towards the place he wants to shoot. This happens with penalties as well. If you look at the foot beside the ball the striker will tell where he will shoot the ball to.
4. Make sure you start your dive before the player has hit the ball. If you won’t do this you will be too late and you are unable to save the penalty. But don’t start to early, because a player will see this and he send the ball into the other side.

These are our hints and tricks you can use to have the biggest chance of scoring a penalty. We hope they will help and you will increase your penalty rating.

*The ball flies into the top left-hand corner. The goalkeeper can’t do anything to stop it. You have scored your penalty and have become the hero of your team.*