Discoveries with multiplication tables (grade 6)

Student of grade 6 have watched in a math lesson the work from students of Croatia (see project 3). They were impressed as they haven't seen this before. I have explained them who it works.

We had not time to draw own diagrams . That's why I used a one online tool that shows this diagrams and can be used up to 200 points.

URL: https://me.nektro.net/projects/circular_multiplication/#500x100

Students and me suggested combinations of number of points and multipliers. I have make notes of students' comments.





N=200, k=9



"I see the pattern! One tip less and one arc less than the multiplier." "YES!!! But we should try it out with bigger numbers and more points".

N=200, k=6



"Wow". "Nice". Students and teachers were convinced that the pattern dos not really change if the number of points rises.

I suggested to look for special numbers. Primes? They also follow the pattern!

"But what about square numbers?" We started to test!







"Is there a rule? "Let's try out systematically! Try out 64 with different number of points!







"I cannot describe a pattern." "Sometimes a sort of rosettes, suitable of the square root (for k=49 and k=64). "Why are there only concentric circles for k=81?"

"We can state that the pattern for square numbers from until 81 (we did not have more time) are more various and more dependant from number of points."

It had been a very interesting lesson. It had been a challenge to find a rule or specific pattern! As we had only one computer and a beamer for presentation we could not try out much.

If other students like to try out ... there will be much more to discover!