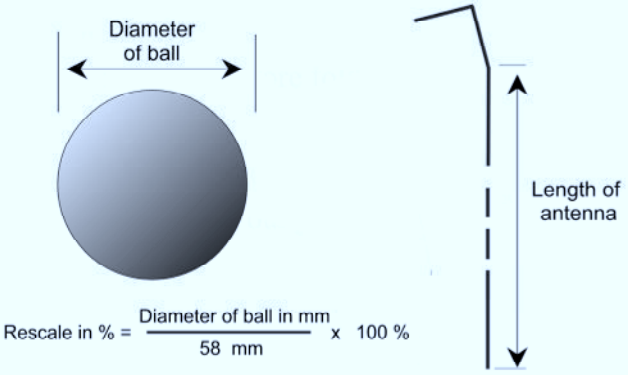
Instruction for Sputnik

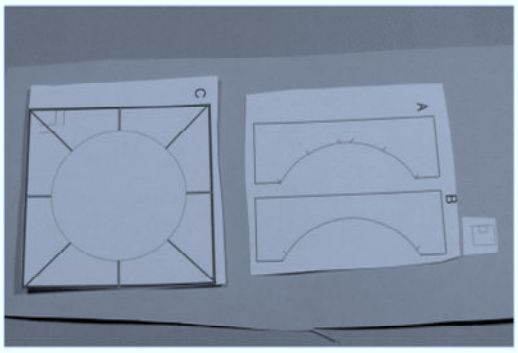
First you will have to find a ball, which you can use for the satellites body. If you want to make the model in exact scale 1:10 - it has to be 58 mm in diameter. It can be really difficult to find. Instead use the table to rescale the model sheet. If you for examble uses a 60 mm ball - you will have to rescale the parts by 103,4 %.



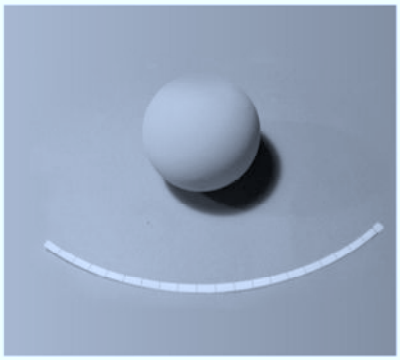
Ball		Antenna			
Diameter in mm	Diameter inches	Length in mm	Length in inches	Printratio in %	Scale of model
47	1,85	235	9,25	81,0%	1: 12
48	1,89	240	9,45	82,8%	1: 12
49	1,93	245	9,65	84,5%	1: 12
50	1,97	250	9,84	86,2%	1: 12
51	2,01	255	10,04	87,9%	1: 11
52	2,05	260	10,24	89,7%	1: 11
53	2,09	265	10,43	91,4%	1: 11
54	2,13	270	10,63	93,1%	1: 11
55	2,17	275	10,83	94,8%	1: 11
56	2,20	280	11,02	96,6%	1: 10
57	2,24	285	11,22	98,3%	1: 10
→ 58	2,28	290	11,42	100,0%	1: 10
59	2,32	295	11,61	101,7%	1: 10
60	2,36	300	11,81	103,4%	1: 10
61	2,40	305	12,01	105,2%	1: 10
62	2,44	310	12,20	106,9%	1: 9
63	2,48	315	12,40	108,6%	1: 9
64	2,52	320	12,60	110,3%	1: 9
65	2,56	325	12,80	112,1%	1: 9
66	2,60	330	12,99	113,8%	1: 9
67	2,64	335	13,19	115,5%	1: 9
68	2,68	340	13,39	117,2%	1: 9
69	2,72	345	13,58	119,0%	1: 8
70	2,76	350	13,78	120,7%	1: 8

When you find a usefull ball, whether it is made out of plastic, expanded expanded polystyrene, wood or rubber - it is a good idea to buy at least one extra ball - for testing of glue and paint.

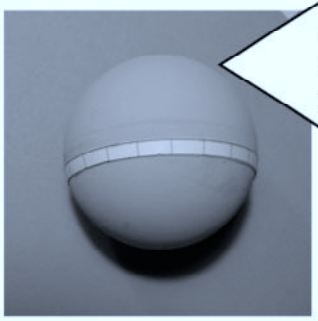
Further more you will need four pieces of wire at least 35 cm long. Print paper parts on thin cardboard. You will also need some thicker white cardboard. For the paper parts you will need some white glue. Depending on the material, that the ball is made of - you might need some other kind of glue for examble superglue. For painting use silver spray paint and black acrylic paint.

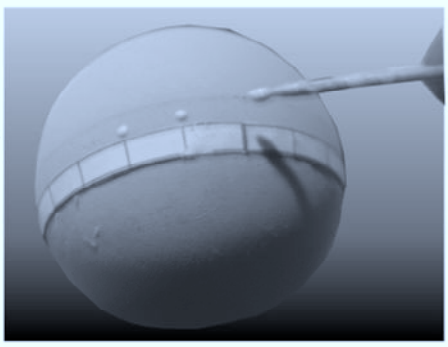


Glue the templates A,B, C and D to cardboard, then cut-out.



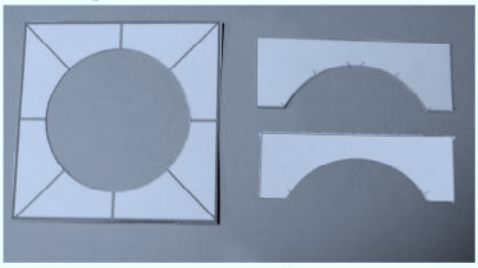
Cut-out part E. Use a little piece of masking tape to assemble it to a ring. The red stribes should be on the outside.



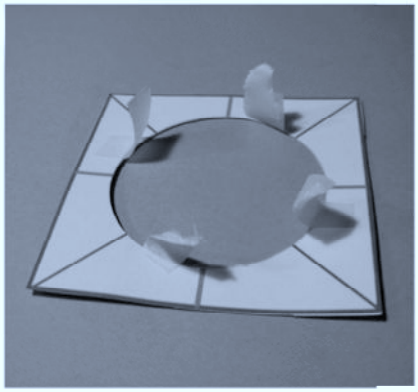


Place a tiny drop (1 mm) of white glue 1 mm just above each of the red guide lines.

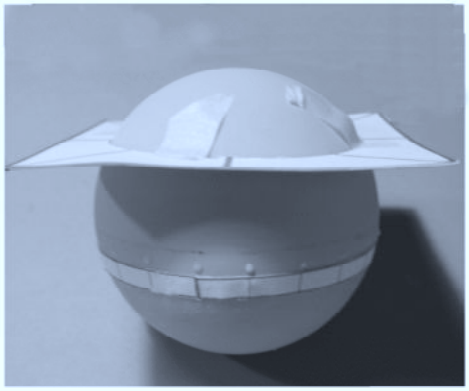
Allow to dry.



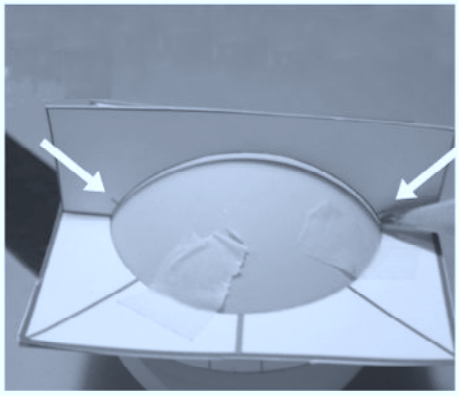
Cut out template A, B and C.



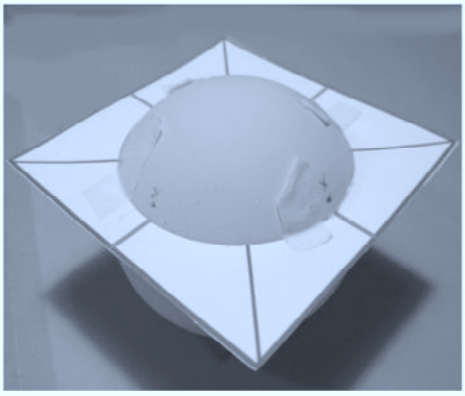
Ad four strips of maskin tape to A as shown above.



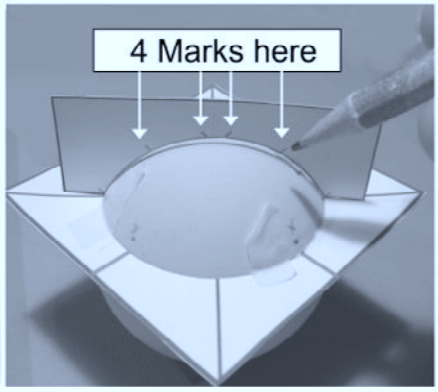
Attach template A to the top of the ball. Take mesurements to make sure, that it is paralel with E.



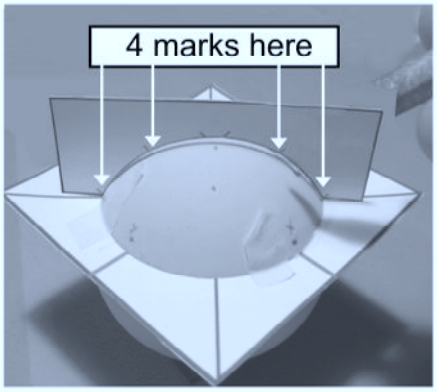
Place template B along the red lines. Mark the places, where we later will drill holes for the antenna.



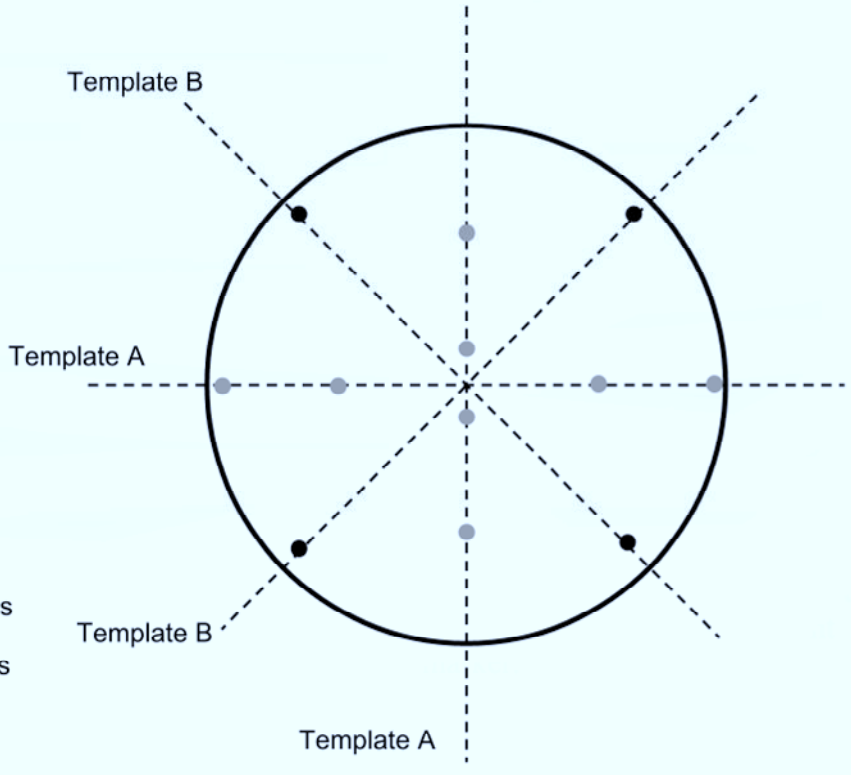
Write an "X" over the places - so you do not mix them up with the other marks.



Place template A along one of the blue lines. Make 4 marks for the rivets.



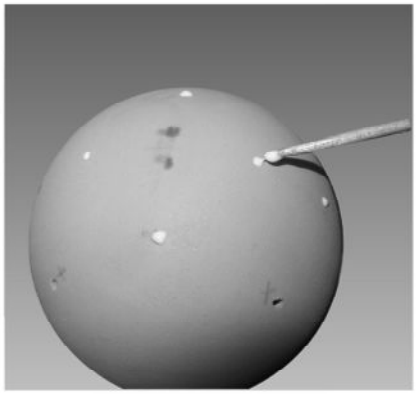
Then place template A along the other blue line. Make 4 marks. Note the difference to the former picture.



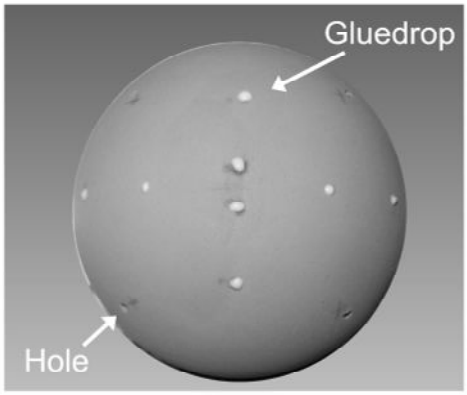
● Markers for holes

● Markers for rivets

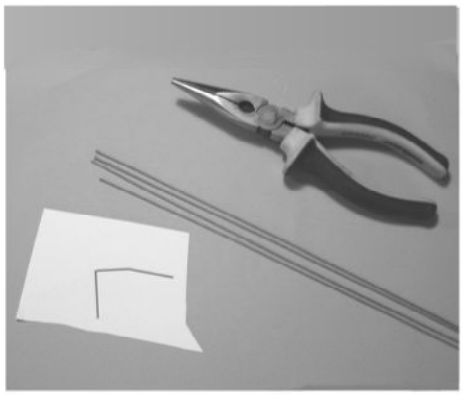
Use a 2 mm bit to dril the four holes for attachment of the antenna.



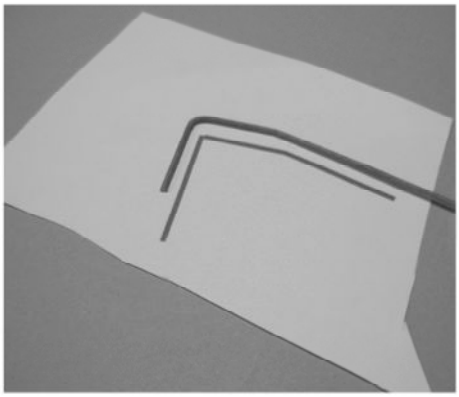
Put a tiny drop (1 mm) of white glue on the marks for the rivets.



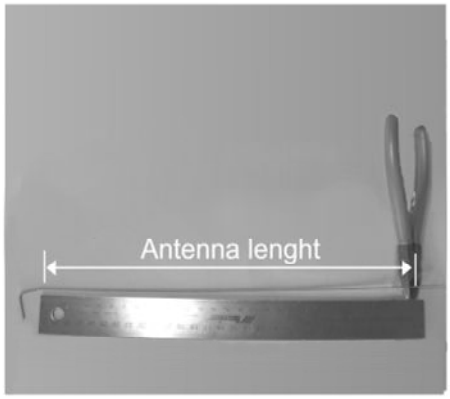
When finished the ball should look like this - viewed from the top.



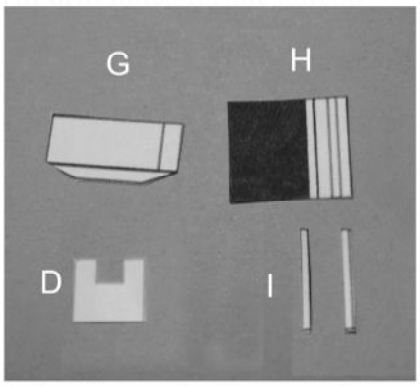
While the glue dries. Make the 4 antennas.

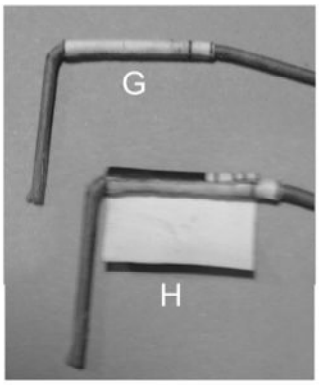


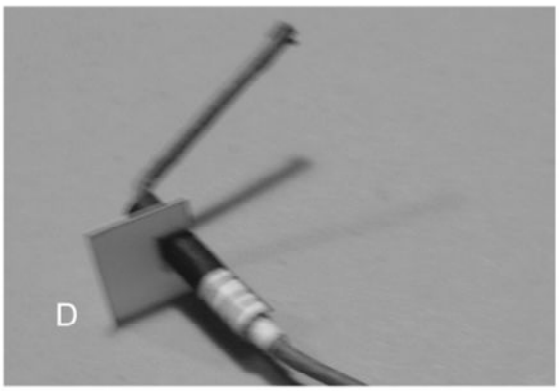
Bend the end of the antenna in to shape using template F.



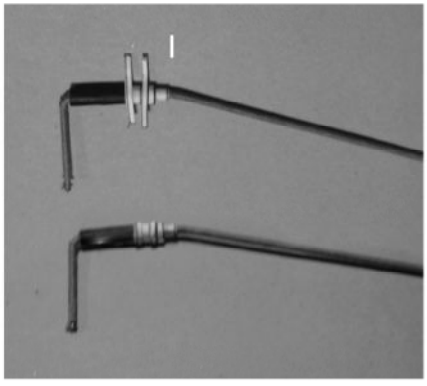
Then cut the antenna in to the rigth length measuring as shown above.







Cut out part G, H, I and template D. First wrap part G around the antenna - then roll part H around part G as shown above. Make sure, that the rolled part H is able to fit inside template D!.



Finally wrap the parts I around part H as shown.