

## 3D satellite puzzles for young and old kids

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The Italian Space Agency (ASI) is active in outreach willing to increase the interest of young generations and general public toward the space activities. ASI proposes educational programmes for supporting and encouraging the development of European society based on knowledge, inspiring and motivating the young generations. One of the initiatives promoted by ASI on this regards is the 3D satellite puzzles. The idea was born in 2007 from the will to conceive an educational product for promoting and explaining to students the small all-Italian mission AGILE (Astrorivelatore Gamma ad Immagini ultra Leggero) thought as a tool for students aged 8-13. Working with this slot of students is very productive in terms of the imprints left on the kids, in fact it is useful to produce things they can use, touch and play with, with an active approach instead of a passive one. Therefore it was decided to produce something that kids could build and use at home with their parents or friends, or all together at school with teachers and mates. Other puzzles followed AGILE, one about the COSMO-SkyMED satellites about Earth Observation and also a broader one of the International Space Station. During these 10 years the puzzles were mostly used as outreach tools for school children, but they surprisingly received a great success also within older generations. So far the 3D puzzles have been printed in more than 10 thousand copies and distributed for free to students of hundreds of schools in Italy, and to the general public through science associations, planetaria and museums. Recently they have been used also during special events such as the international Geoscience Communication School (as best practice outreach tool), the EXPO 2015 and the European Researcher's Night at the Parliamentarium in Brussels 2016. While the students are building the puzzles, the tutor explains them the different components that they are assembling, what the importance of the satellite is and how it works. It is interesting to see how the students can spend hours building their own satellite and how passionate they are for this type of tool.