

Didattica duepuntozero:
Generazione Web 2017/18

Tecnologia creativa: Progettare e creare in
3D

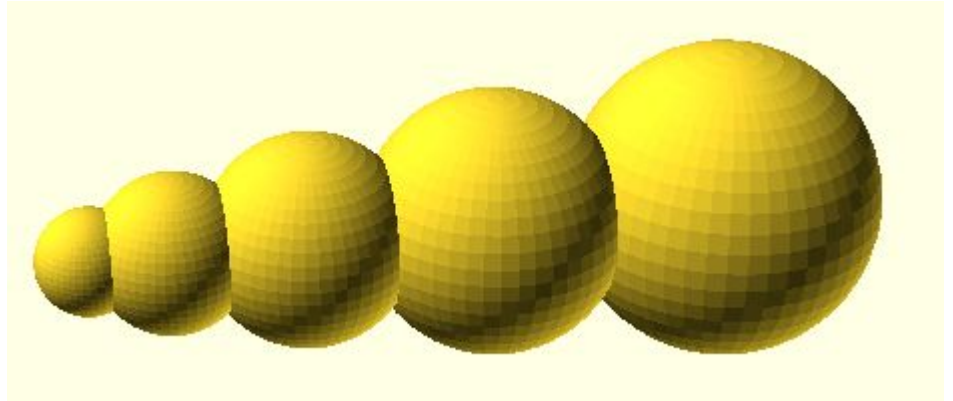
**Funzionalità avanzate di
Openscad**

Iterazioni

```
for(variable = [start : increment : end])  
  for(variable = [start : end])  
    for(variable = [vector])
```

Esempio:

```
for (i=[0:5])  
  translate([i*i,0,0])  
  sphere(i+1,$fn=50);
```

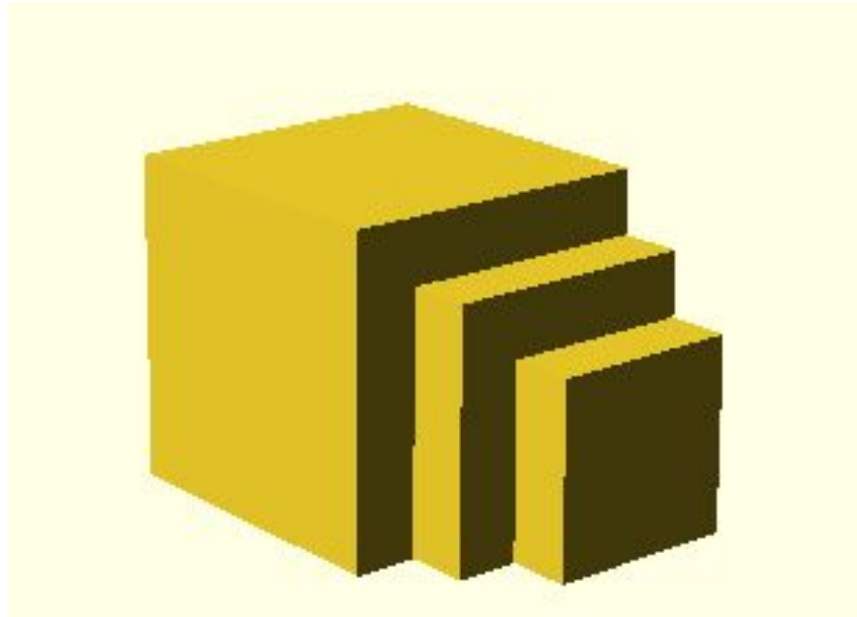


Altri esempi

```
for (i=[3,4,5])
```

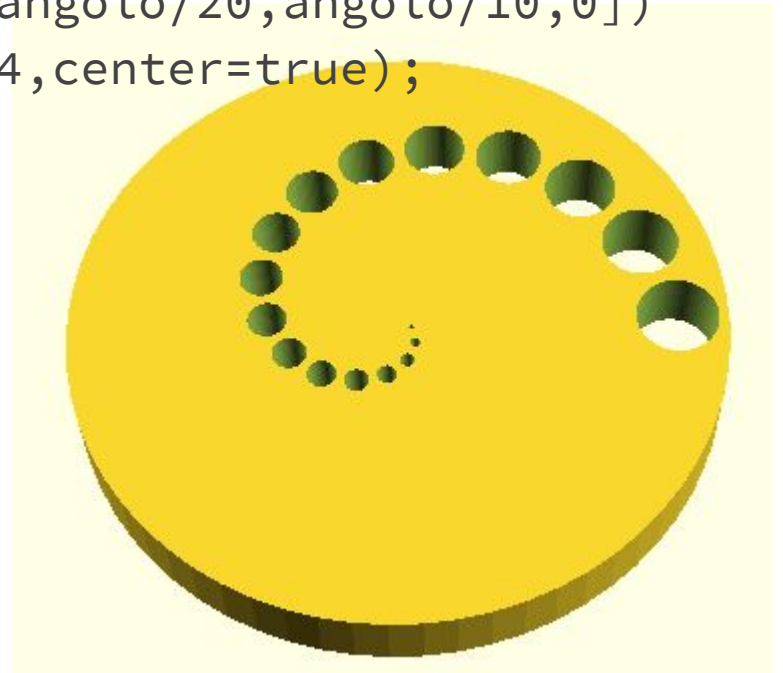
```
  translate([i,0,0])
```

```
  cube(i,$fn=50);
```



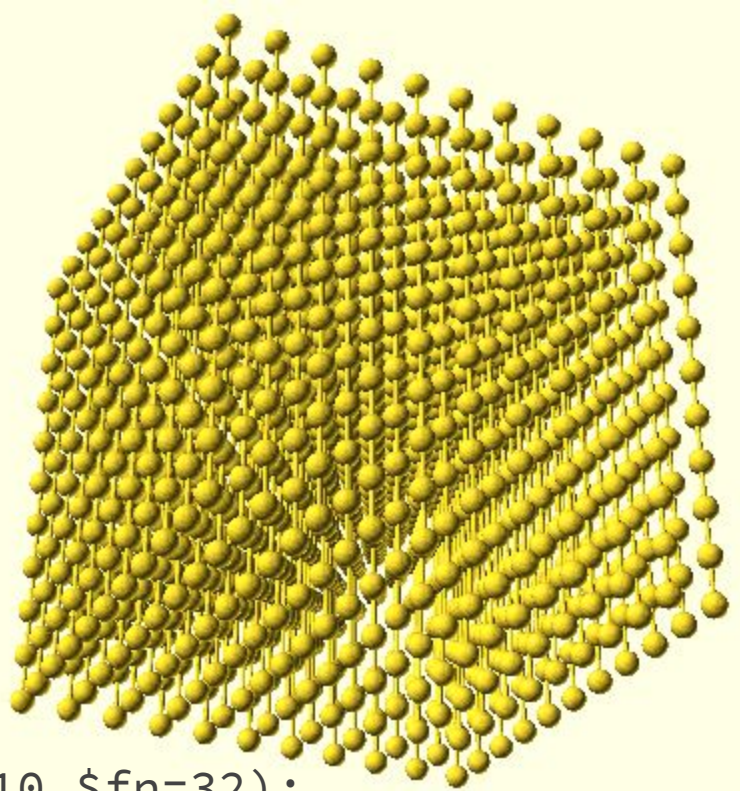
```
difference()
```

```
{  
cylinder(r=45,h=10,$fn=32,center=true);  
for(angolo=[0:20:340])  
  rotate([0,0,angolo])translate([angolo/20,angolo/10,0])  
  cylinder(r=angolo/60,h=11,$fn=64,center=true);  
}
```

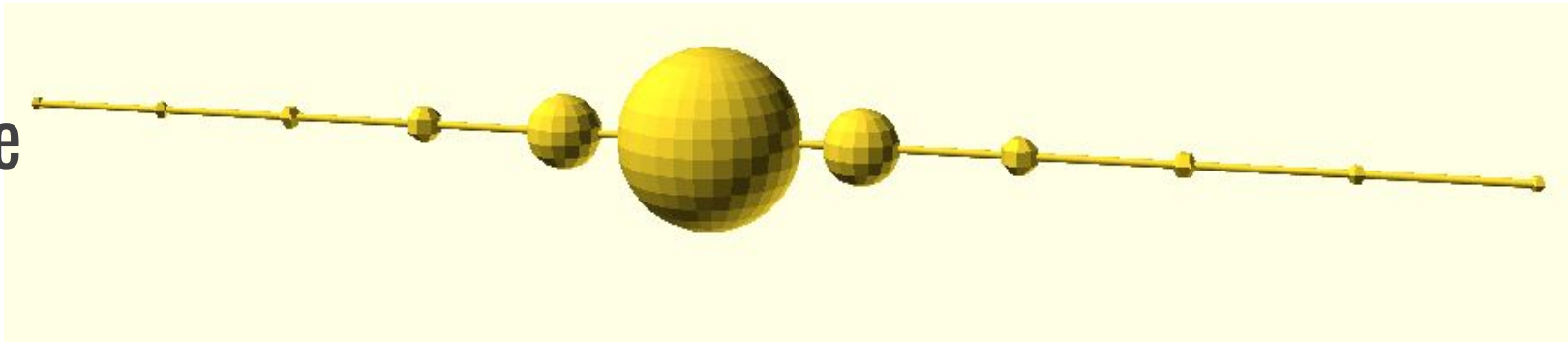


For nidificati

```
for(i=[-100:20:100])  
  for(j=[-100:20:100])  
    {  
      for(k=[-100:20:100])  
        translate([i,j,k])sphere(d=10,$fn=32);  
        translate([i,j,-100])cylinder(r=1,h=200,$fn=16);  
    }  
}
```



if.... else



```
rotate([0,90,0])cylinder(r=0.5,h=200,center=true,$fn=64);
```

```
for(i=[-10:2:10])
```

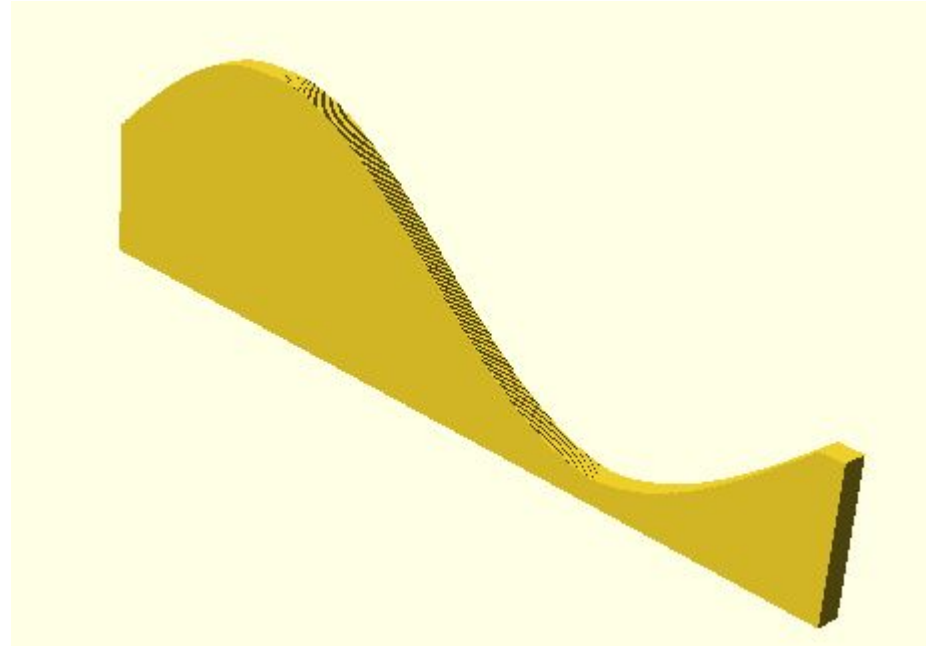
```
    if(i!=0)
```

```
        translate([-i*10,0,0])sphere(d=20/abs(i));
```

```
    else sphere (12);
```

Funzioni trigonometriche

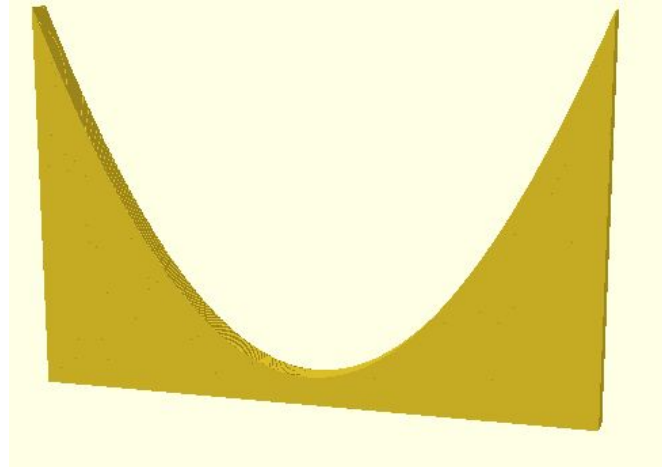
```
for(i=[0:360])  
    translate([i,0,0])  
    cube([10,10,sin(i)*50+60]);
```



Altre funzioni:

```
for(i=[-500:500])
```

```
    translate([i/10,0,0])cube([0.1,5,i*i/4000+5]); //z=x^2/4000+5
```



Importare file vettoriali

- Installare Inkscape per generare file vettoriali
- Installare l'estensione inkscape-paths2openscad
- Selezionare gli oggetti e convertirli in tracciato (Tracciato->Da oggetto a tracciato)
- Esportare: Estensioni->Genera da tracciato->Paths to Openscad
- Aprire il file con Openscad

Utilizzare Paths2openscad per windows

Scaricare i file:

<https://github.com/fablalnbg/inkscape-paths2openscad/blob/master/paths2openscad.inx>

<https://github.com/fablalnbg/inkscape-paths2openscad/blob/master/paths2openscad.py>

Copiarli nella cartella Programmi/inkscape/share/extensions

Avviare Inkscape come amministratore

Seguire le istruzioni precedenti. Il file .scad si troverà nella cartella Programmi/inkscape/share/extensions