

CMSC427

L08P4: Shading

Local Models –

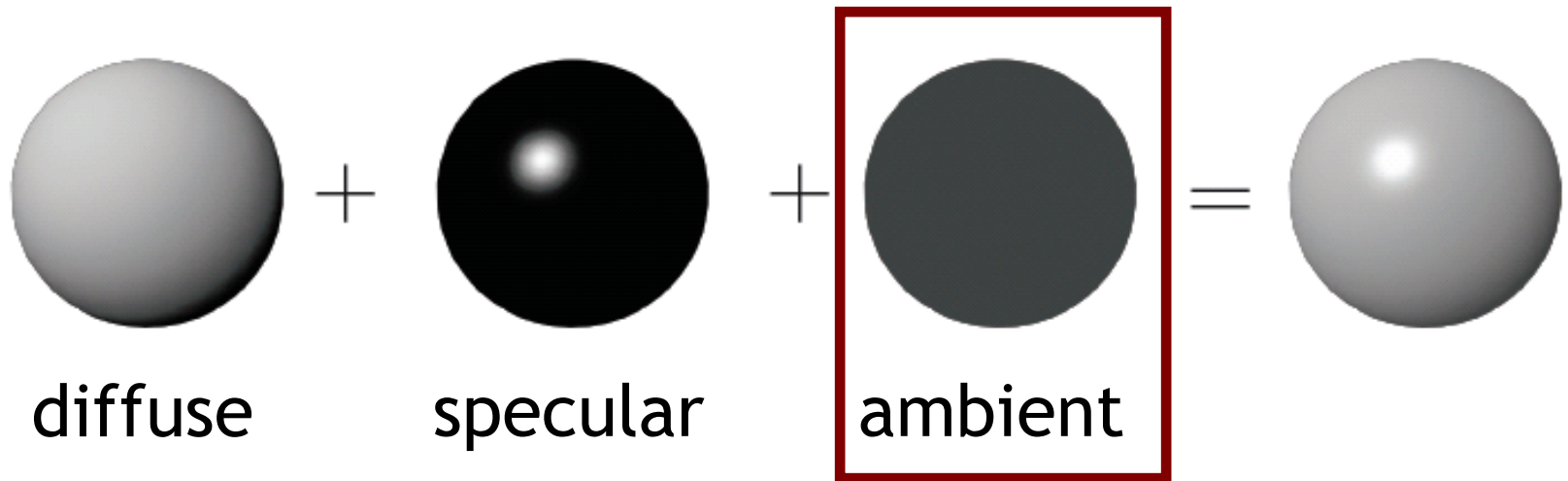
Ambient and

Summary

Credit: slides from Dr. Zwicker

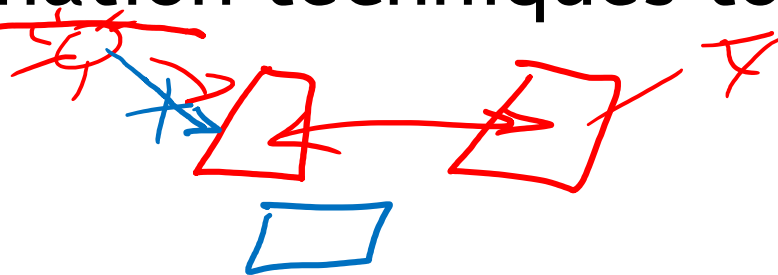


Simplified model



Ambient light

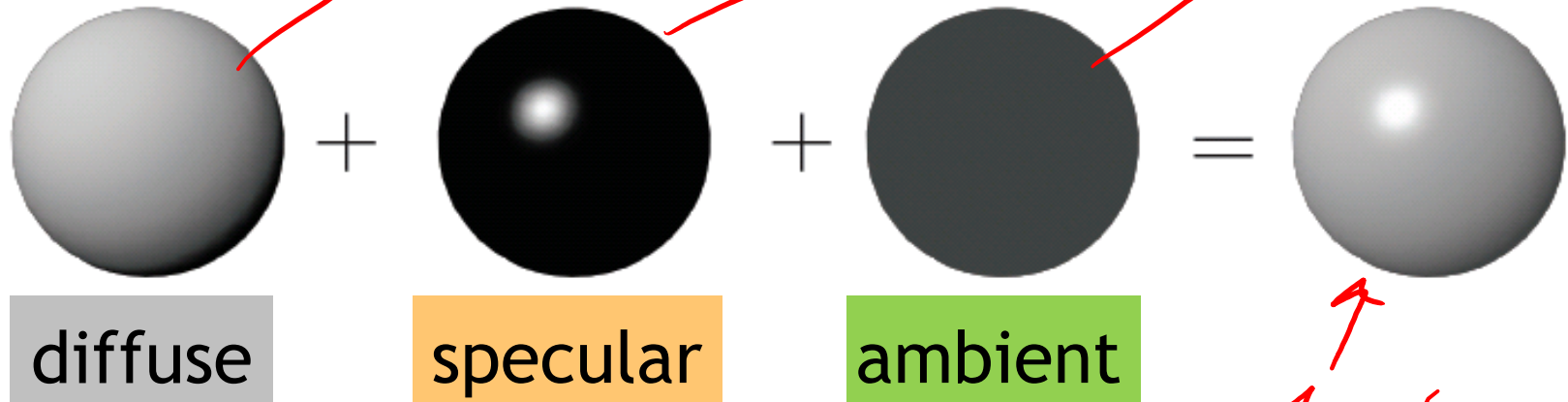
- In real world, light is bounced all around scene
- Could use global illumination techniques to simulate
- Simple approximation
 - Add constant ambient light at each point $k_a c_a$
 - Ambient light c_a
 - Ambient reflection coefficient k_a
- Areas with no direct illumination are not completely dark



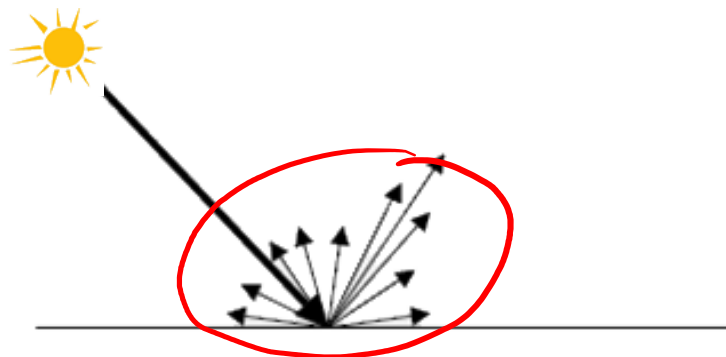
Complete model

- Blinn model with several light sources i

$$c = \sum_i c_{l_i} (k_d (\mathbf{L}_i \cdot \mathbf{n}) + k_s (\mathbf{h}_i \cdot \mathbf{n})^s) + k_a c_a$$



final sphere



Notes

$$c = \sum_i \underline{c_{l_i}} (\underline{k_d} (\mathbf{L}_i \cdot \mathbf{n}) + \underline{k_s} (\mathbf{h}_i \cdot \mathbf{n})^s) + \underline{k_a} \underline{c_a}$$

- All colors, reflection coefficients have separate values for R,G,B
- Usually, ambient = diffuse coefficient
- For metals, specular = diffuse coefficient
 - Highlight is color of material
- For plastics, specular coefficient = (x,x,x)
 - Highlight is color of light

