

RENDERING

mit Ashlar-Vellum

Cobalt Xenon Argon

www.arnold-cad.com



Erstellen photorealistischer Darstellungen

Erstellen Sie Ihre Welt!

- Modellier Tips für mehr Realität
- Hintergrund und Szene
- Betrachtung der Szene
- Perspektive
- Reflektierende Objekte

Beleuchten Sie Ihre Welt!

- Lichtquellen einrichten
- Licht Farbe, Stimmung
- Schatten
- Leuchtende Objekte
- Fortgeschrittene Beleuchtung

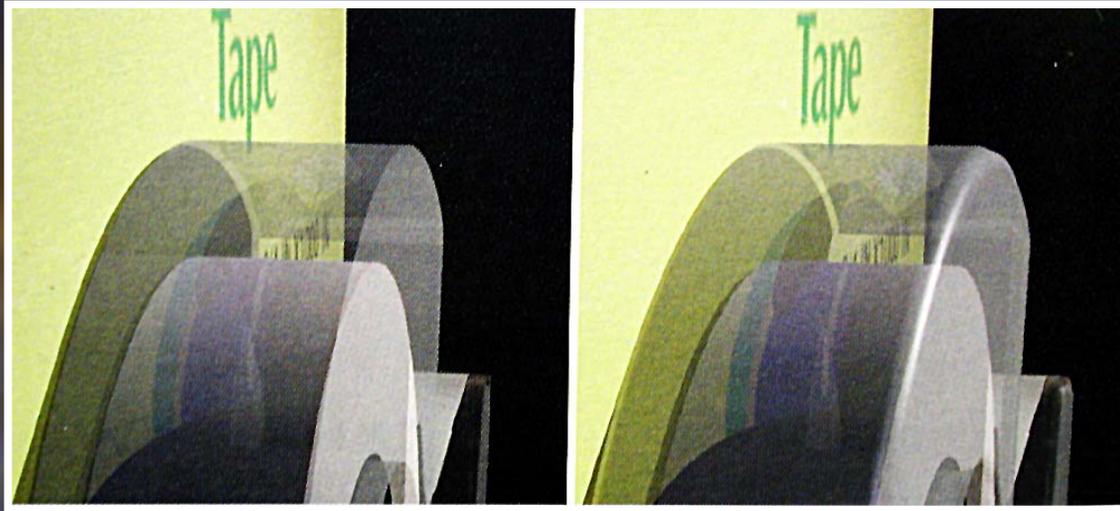
Verleihen Sie Ihrer Welt Leben!

- Materialien
- Arten von Plastik
- Metall
- Glas und durchsichtige Materialien
- Bilder basierte Texturen
- Modellieren mit Texturen
- Transparenz
- Abbilder Decals Tricks und Effekte
- Spezielle und ungewöhnliche Materialien

Erstellen Sie Ihre Welt!

Modellier Tips für mehr Realität

Modellier Tip 1 – Verrunden Sie die Kanten



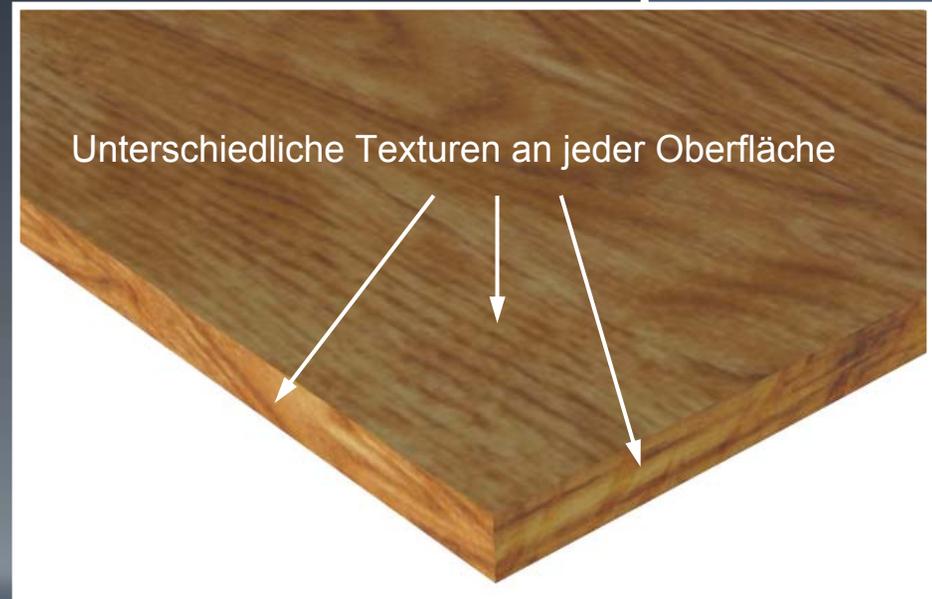
In der realen Welt gibt es beinahe keine scharfen Kanten. Bringen Sie an alle Kanten kleine Radien an. Dies verleiht Ihrem Rendering sehr viel mehr Realität.



Modellier Tip 2 – Ändern Sie die Auflösung von Objekten auf Superfine



Modellier Tip 3 – Oberflächen für bessere Kontrolle von Texturen



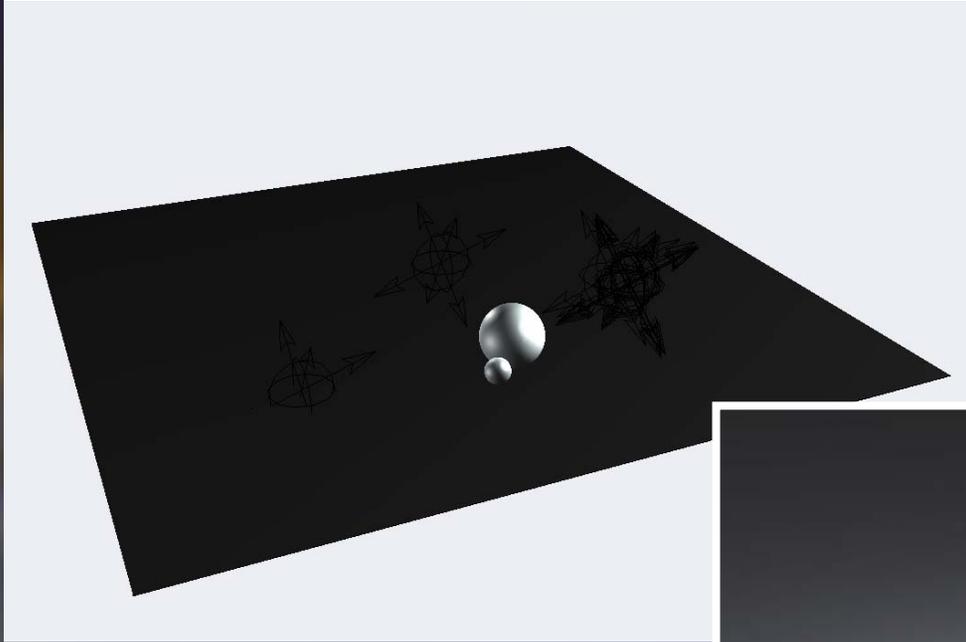
Modellier Tip 4 – Modellieren Sie so detailgetreu wie möglich



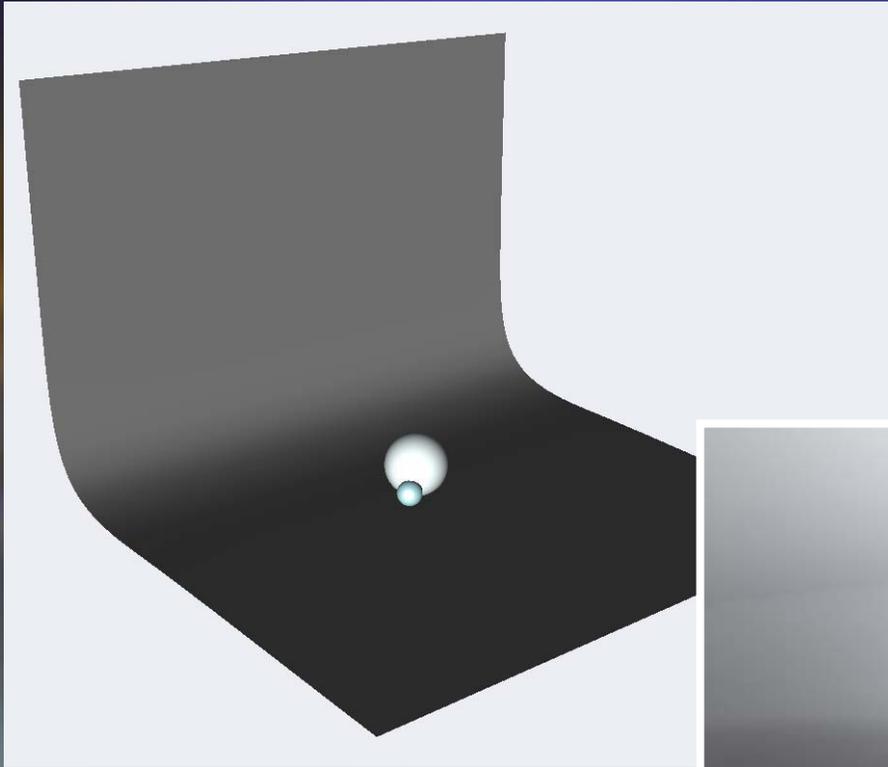
Erstellen Sie Ihre Welt!

Hintergrund und Szenen

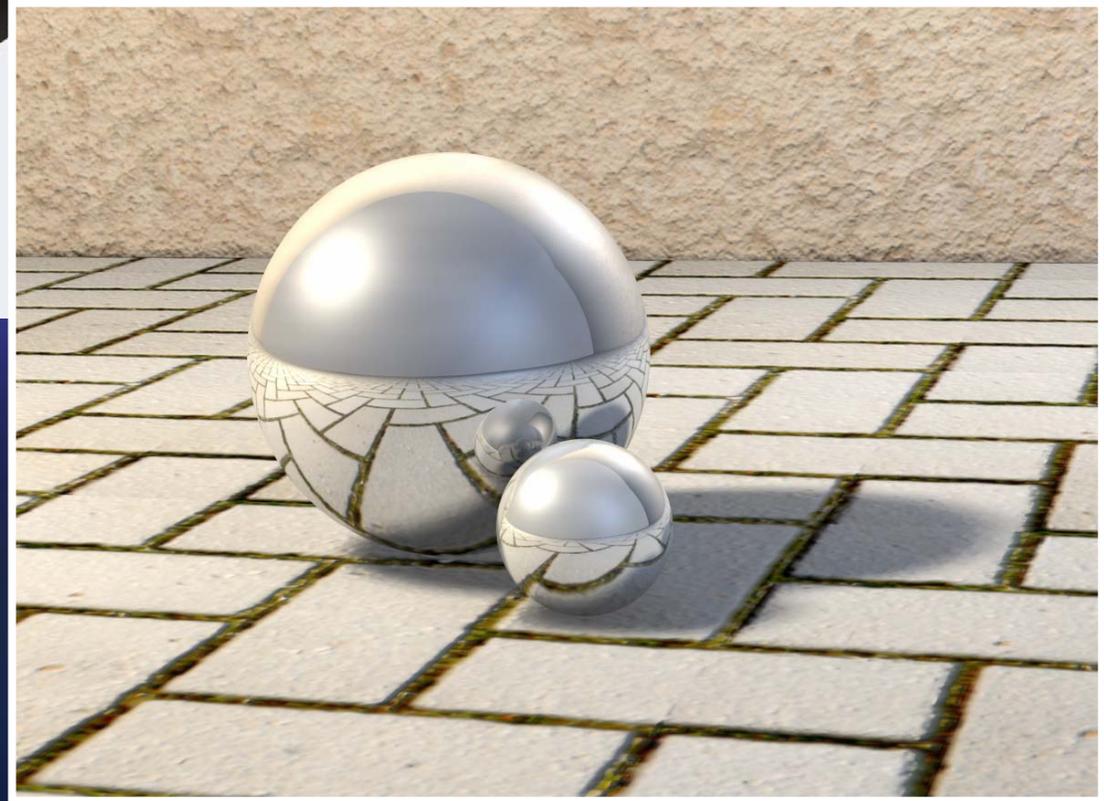
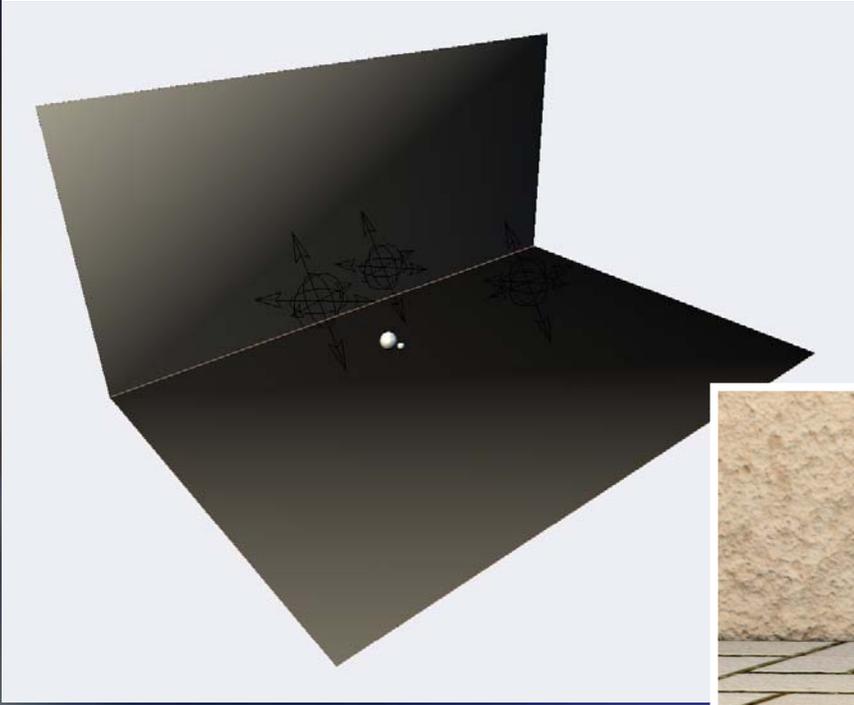
Hintergrund und Szenen – Einfacher Boden



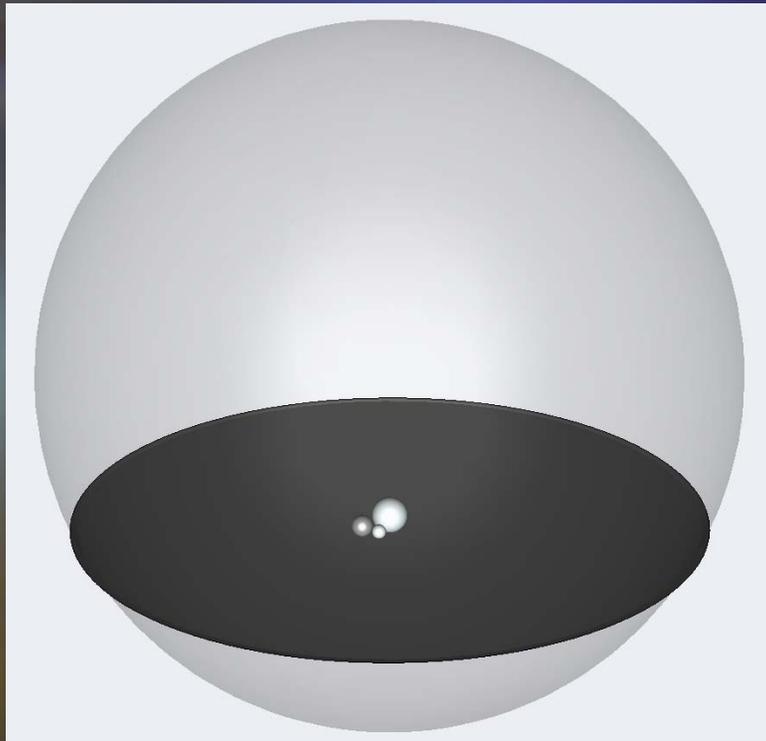
Hintergrund und Szenen – Gewölbte Fläche



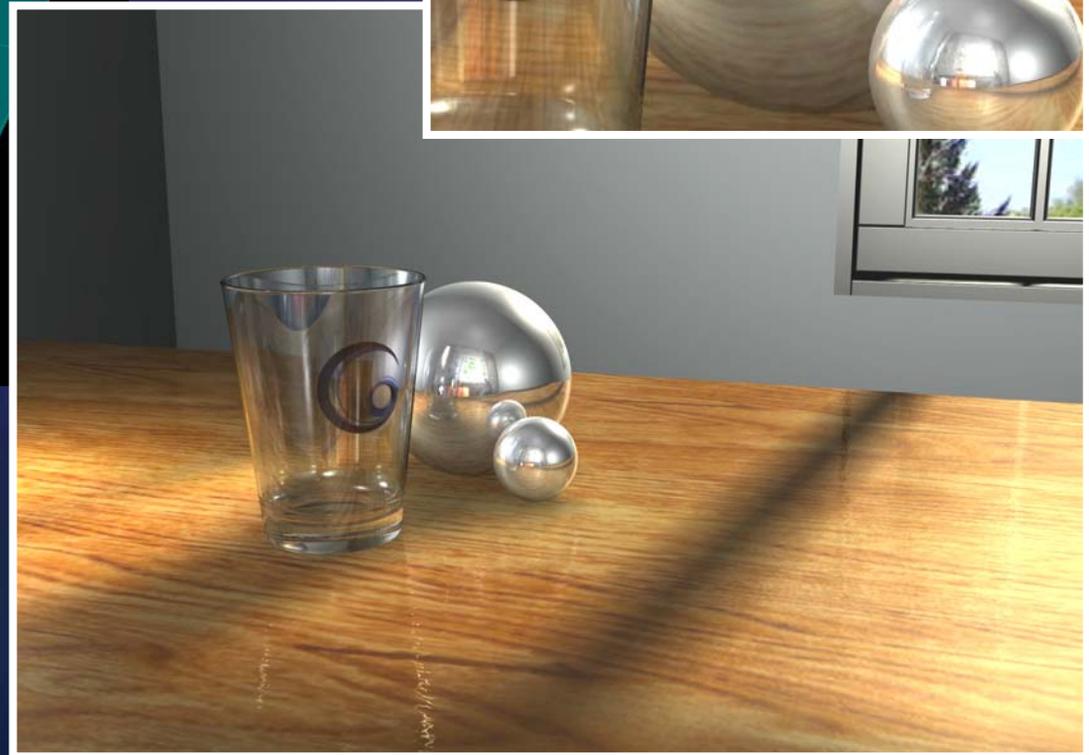
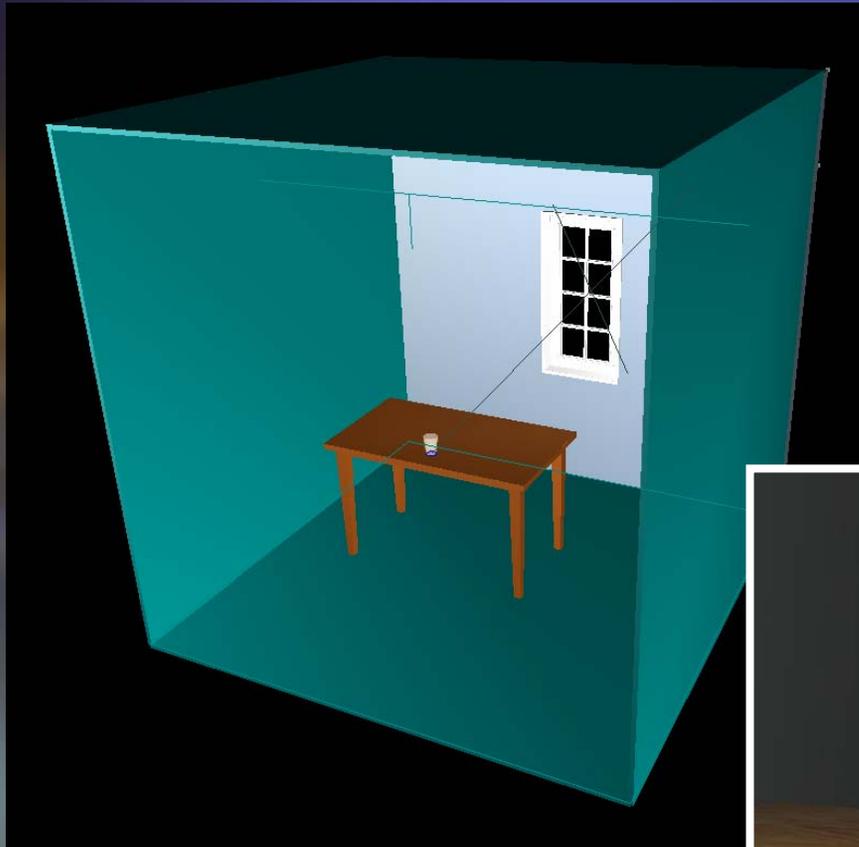
Hintergrund und Szenen – Boden und Wand



Hintergrund und Szenen – Hintergrundbild vs. “Sky Dome” Kugel



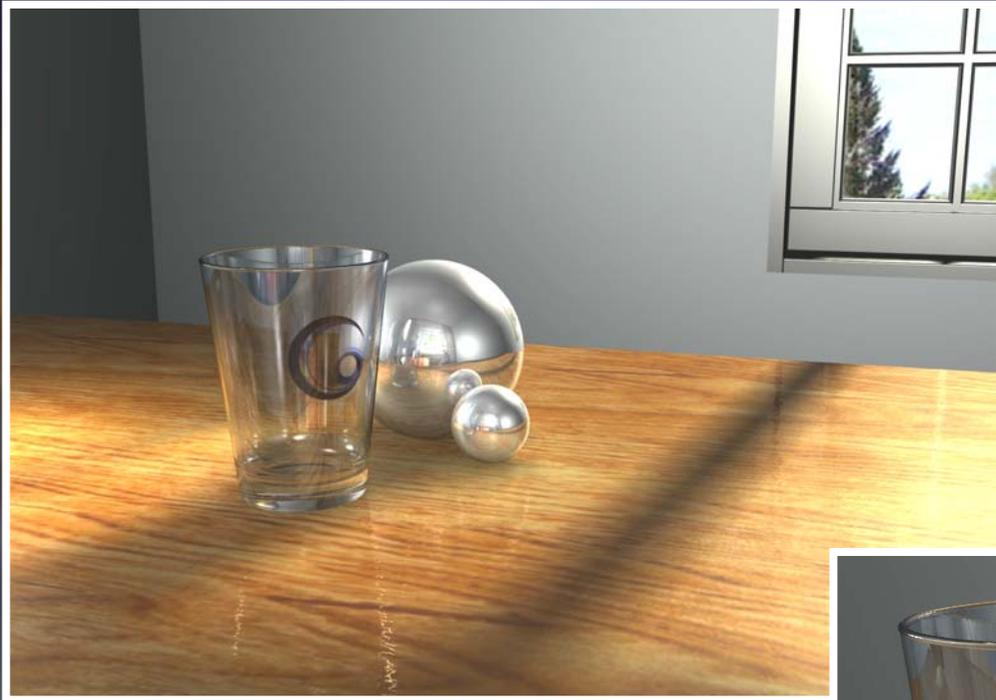
Hintergrund und Szenen – Detaillierter Raum



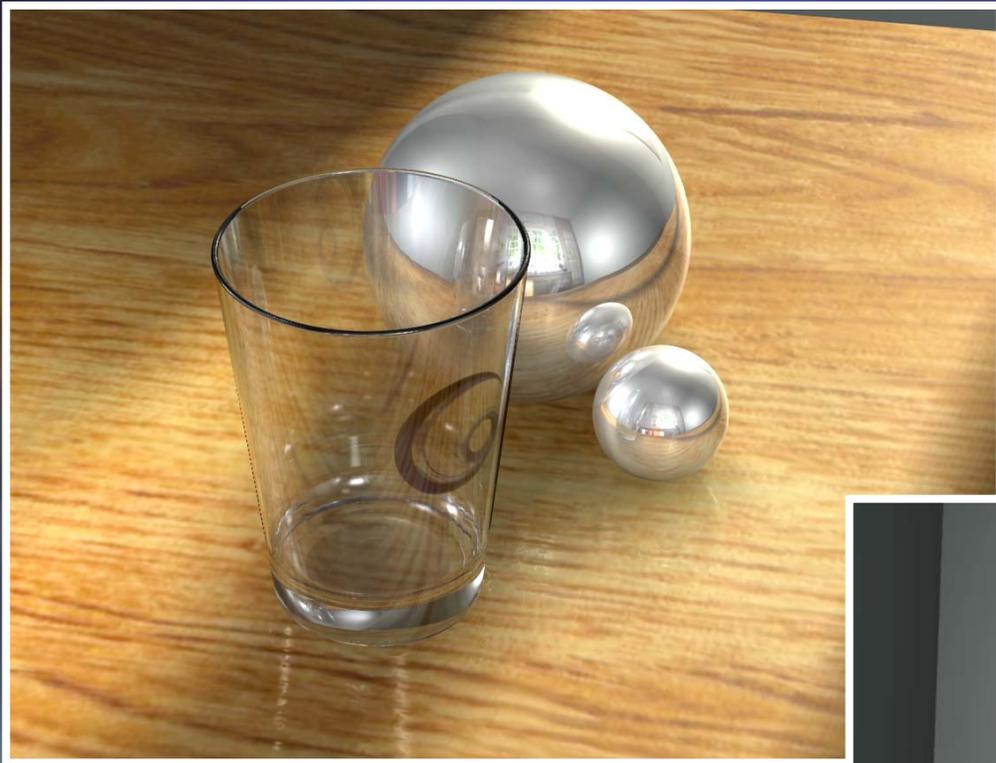
Erstellen Sie Ihre Welt!

Betrachtung der Szene

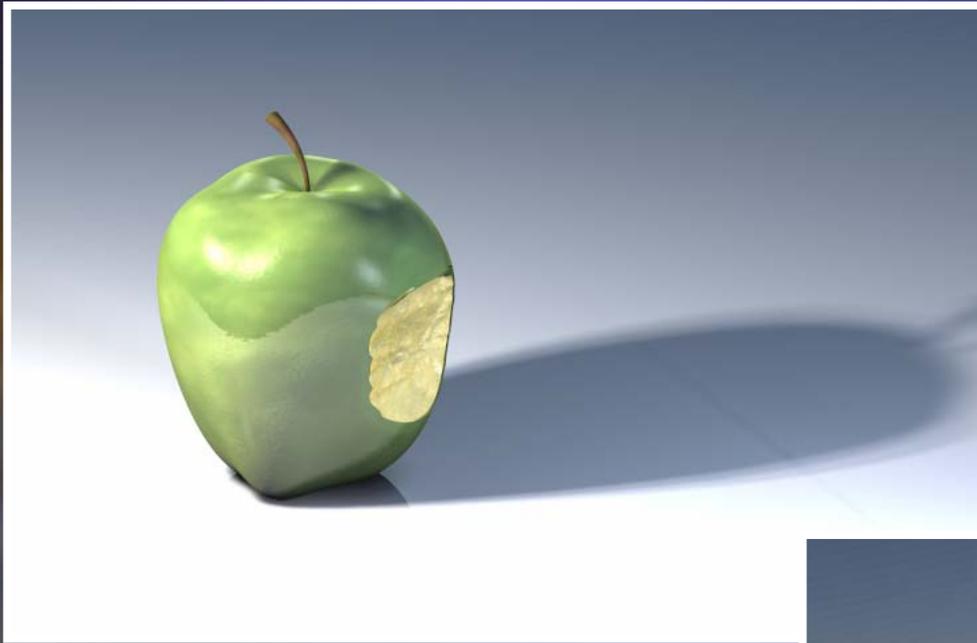
Betrachtung der Szene: Ansichtswinkel - Weitwinkel oder Grossaufnahme?



Betrachtung der Szene: Weitwinkel- Grosser oder kleiner Winkel?



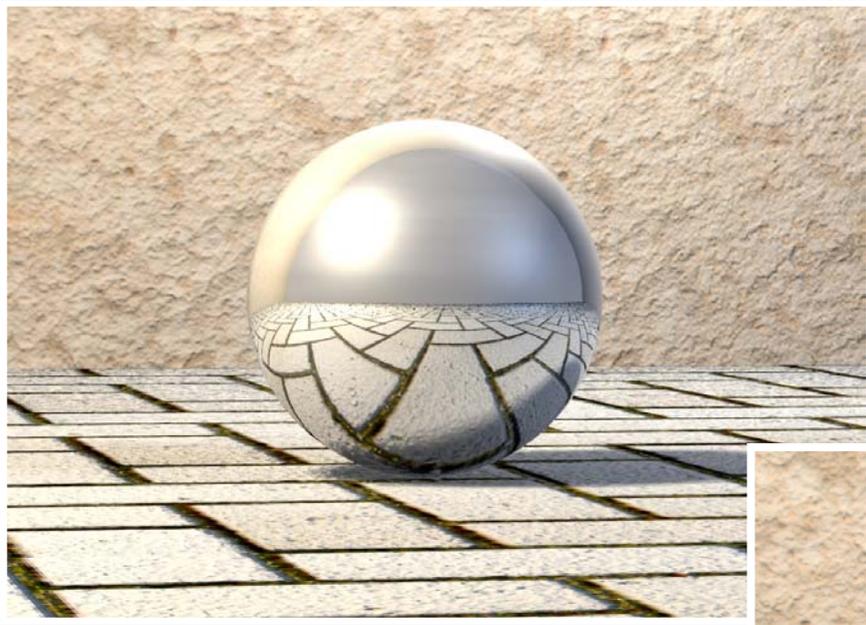
Betrachtung der Szene: Entscheiden Sie von wo das Licht kommt



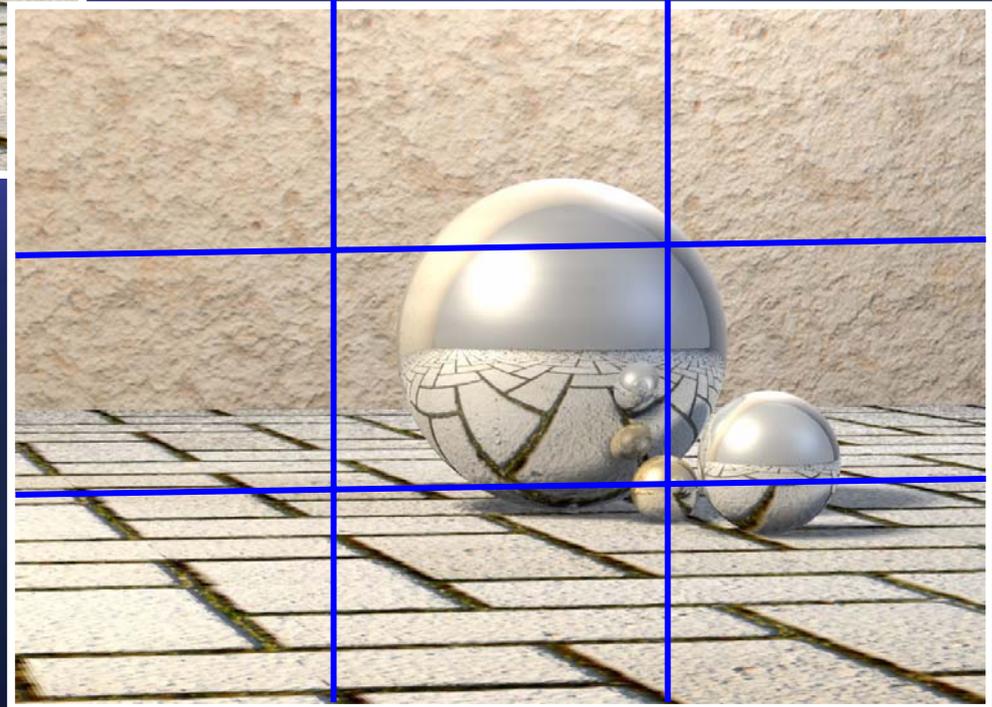
Welche Seite Ihres Objekt soll beleuchtet sein, bzw. welche Seite Ihres Objekts soll Schatten enthalten.



Betrachtung der Szene: Was ist der Brennpunkt?



Betrachtung der Szene: Die "Dreier Regel"



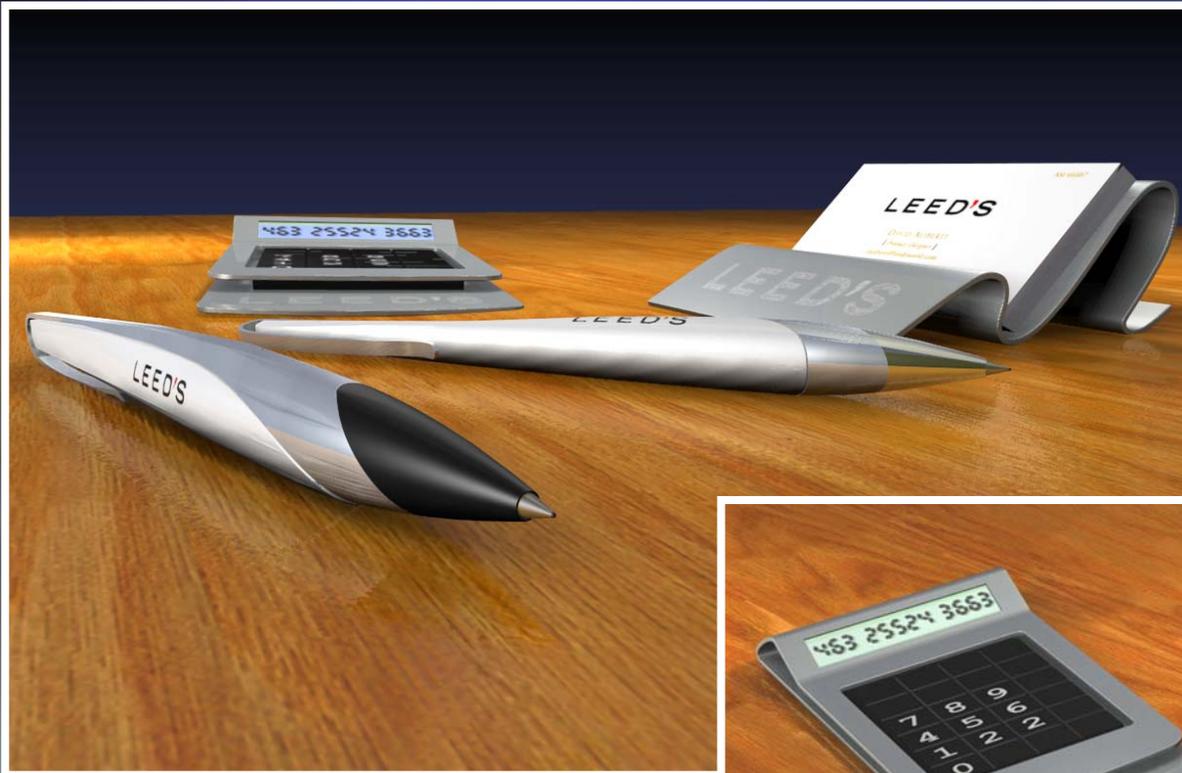
Betrachtung der Szene: Ausgewogene Zusammenstellung



Erstellen Sie Ihre Welt!

Perspektive

Perspective: Ansicht unten oben?



Perspektive: Ansichtst Innen oder Aussen?

Objekt Grösse = 240'' x 190''



← Ansicht aussen:

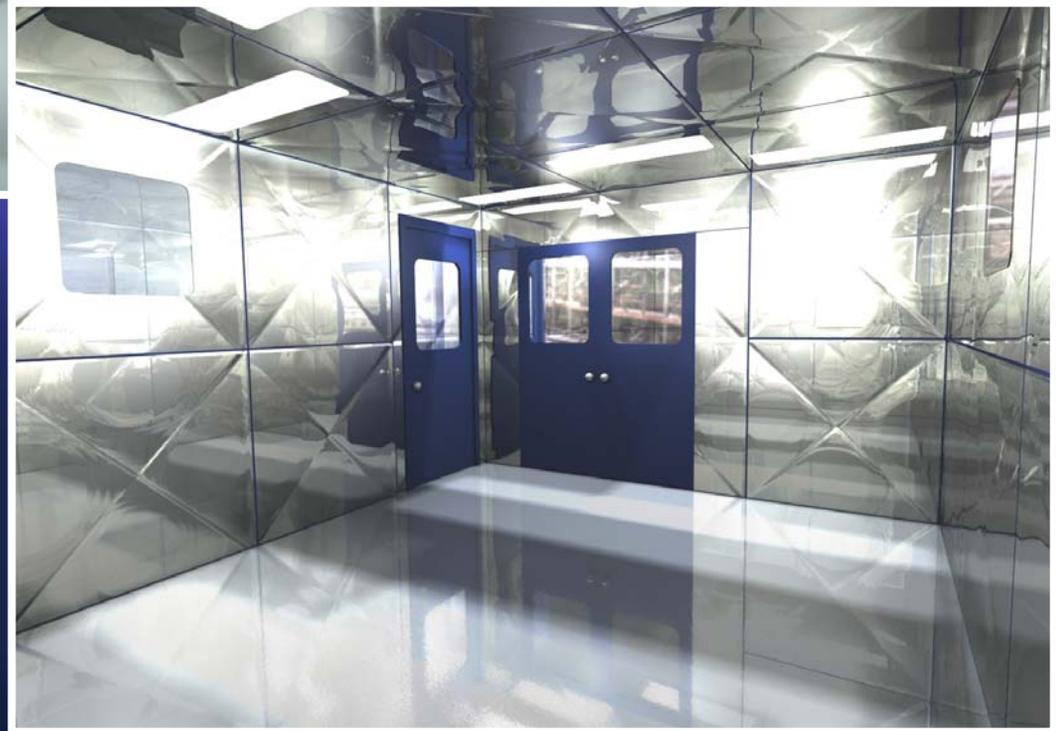
FOV = 40

Focal Length = 400

Ansicht innen: →

FOV = 65

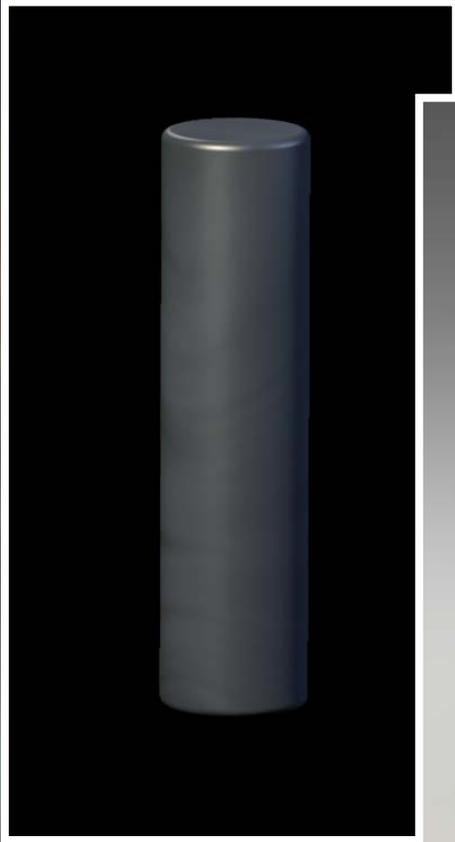
Focal Length = 120



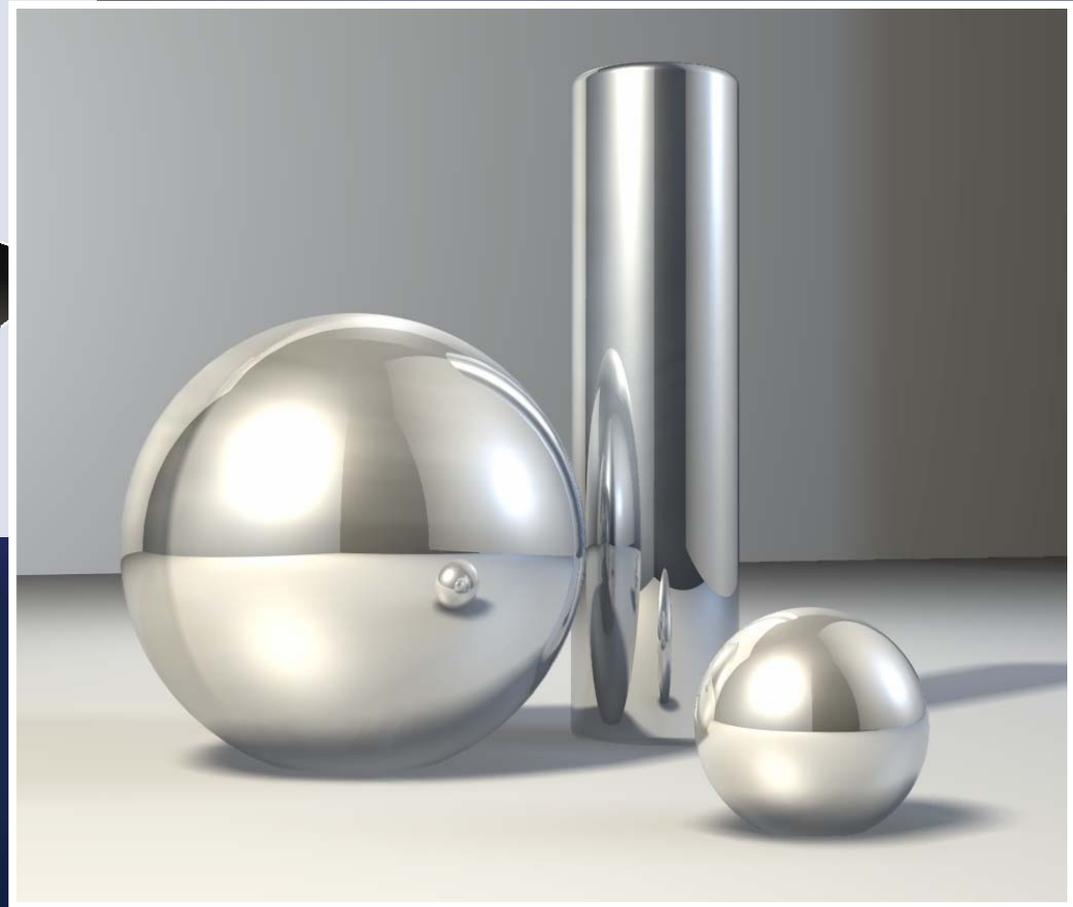
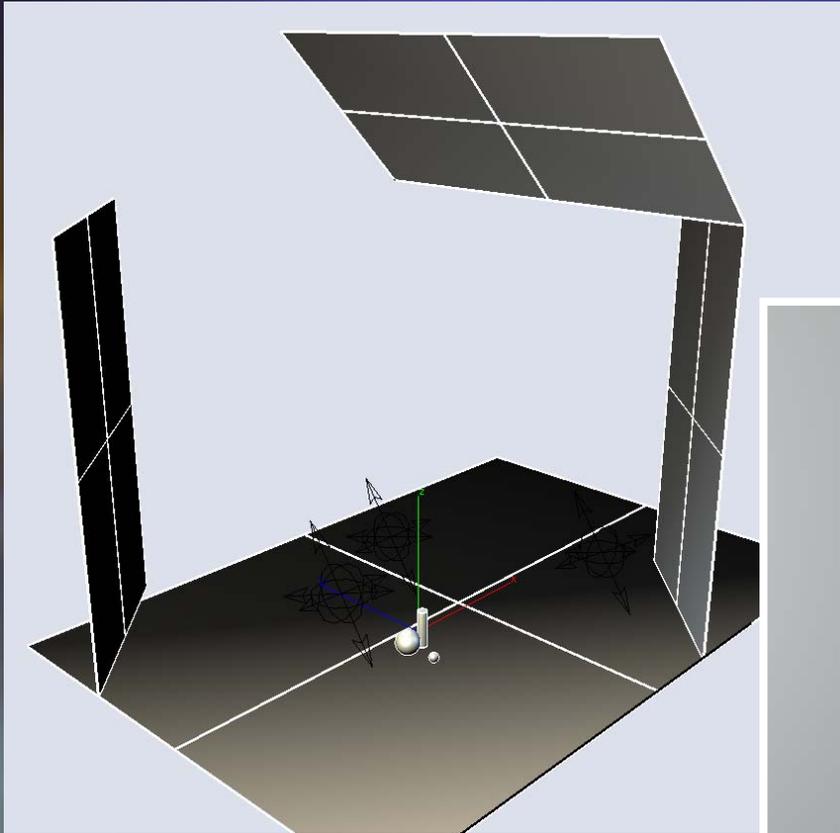
Erstellen Sie Ihre Welt!

Reflektierende Objekte

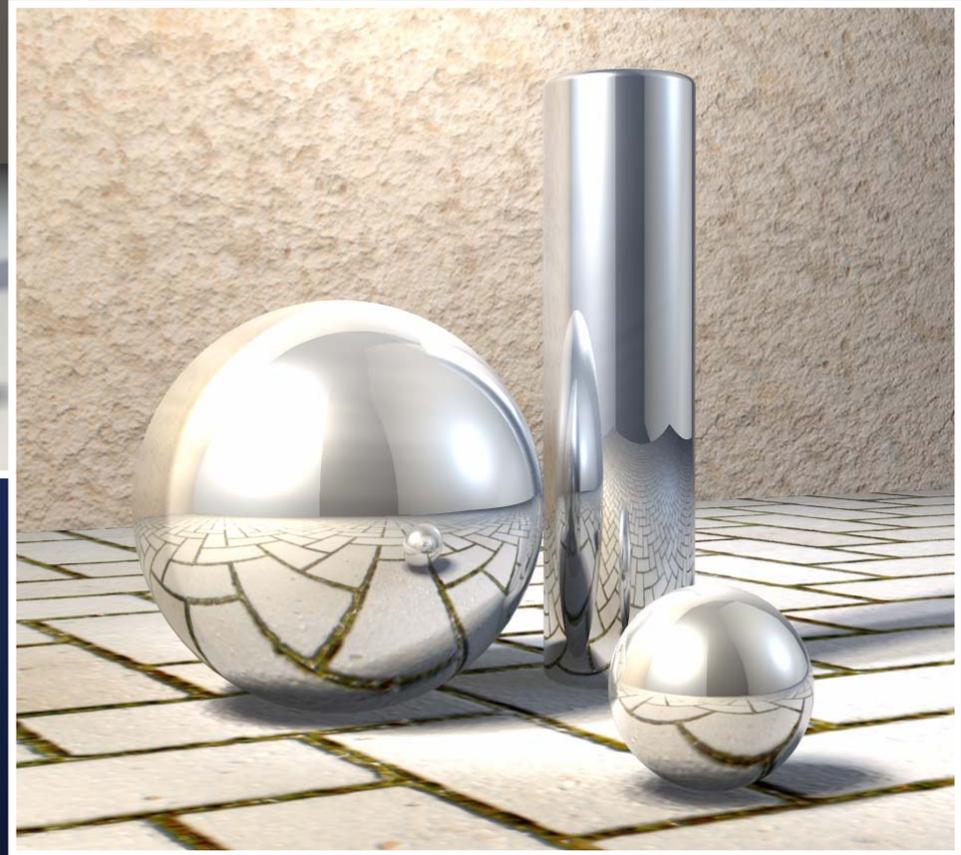
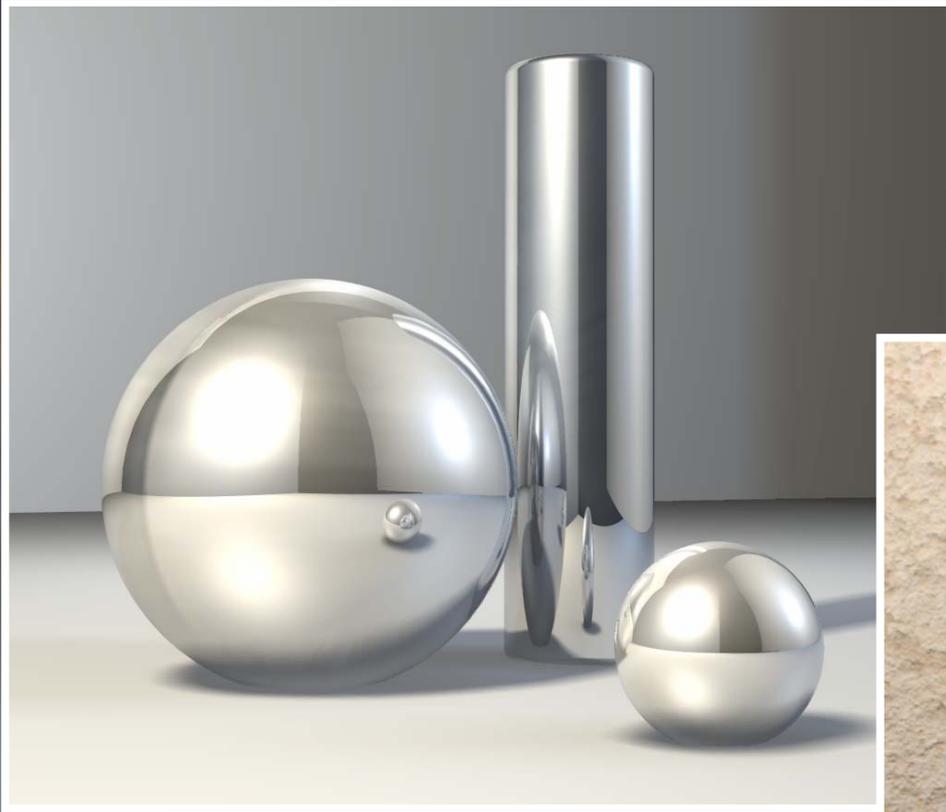
Reflektierende Objekte: Boden und weitere Objekte



Reflektierende Objekte : Ausserhalb des Bildes liegende Objekte



Reflektierende Objekte: Texturen

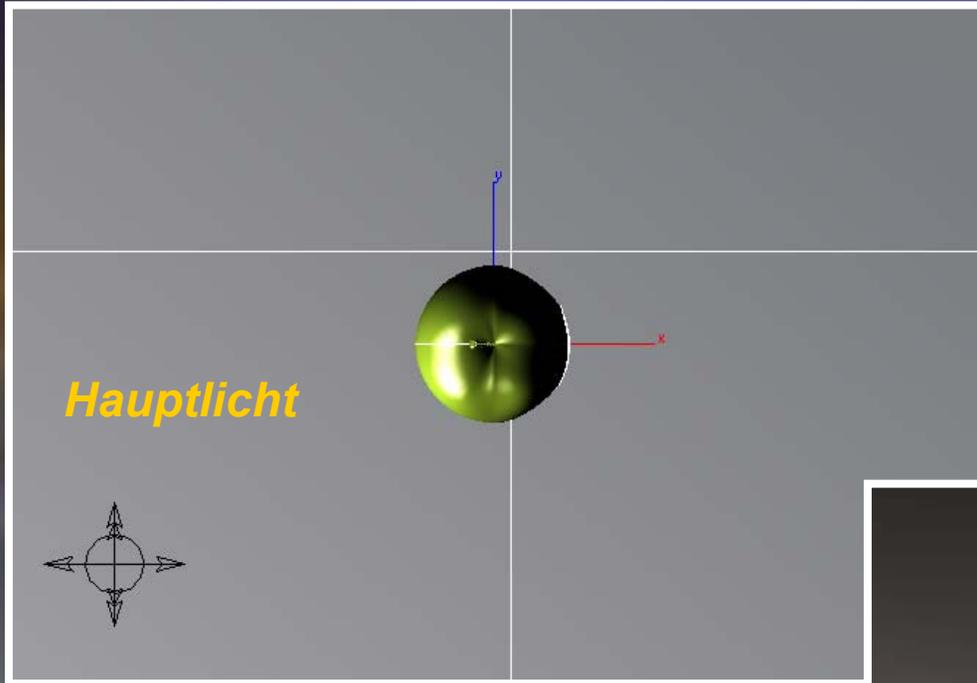


Beleuchten Sie Ihre Welt!

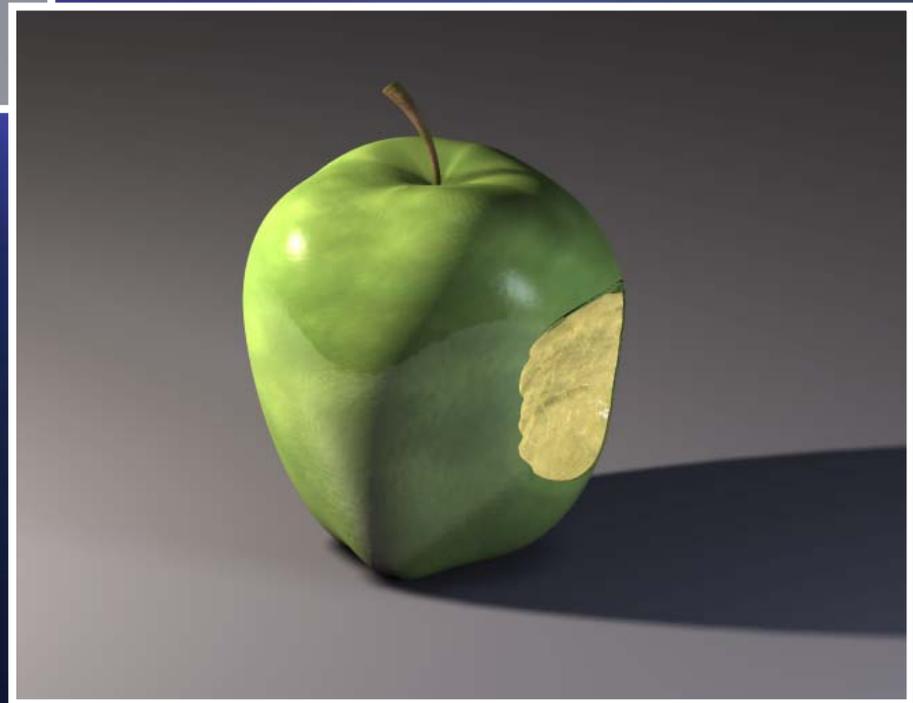
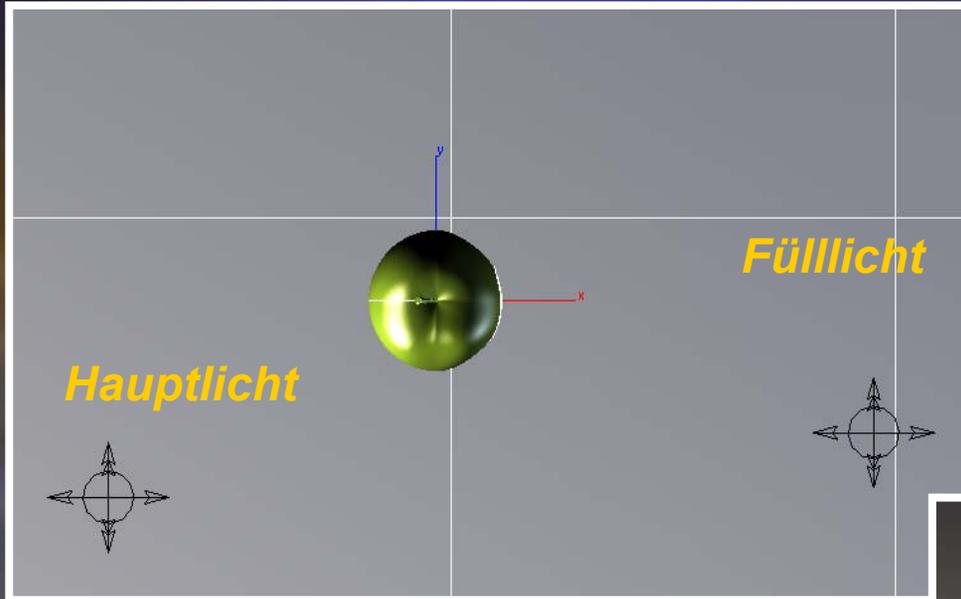
Lichtquellen einrichten –

Danken Sie wie ein Fotograf

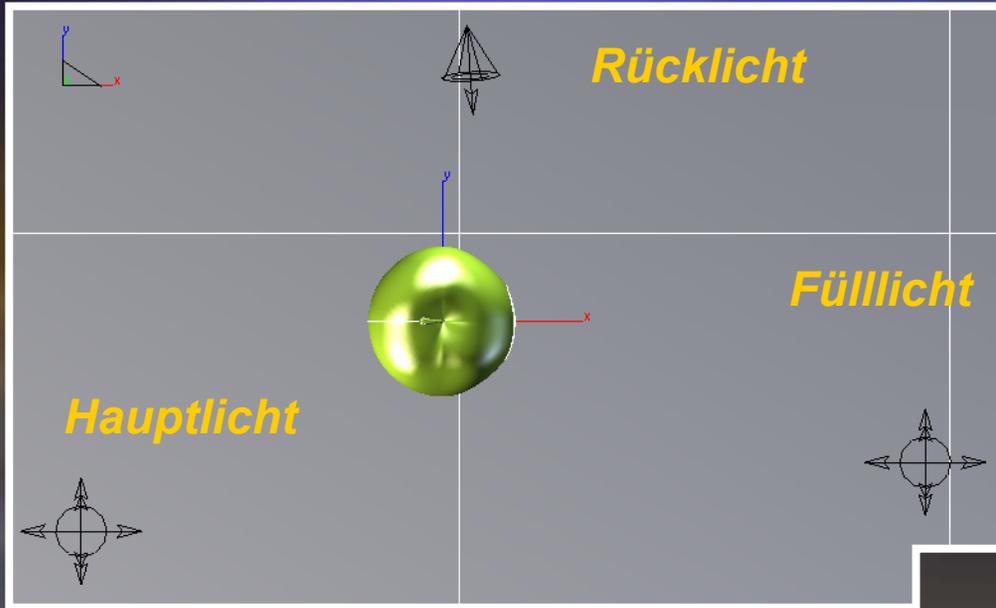
3 Punkt Lichtquelle einrichten: Das Hauptlicht



3 Punkt Lichtquelle einrichten : Das Fülllicht



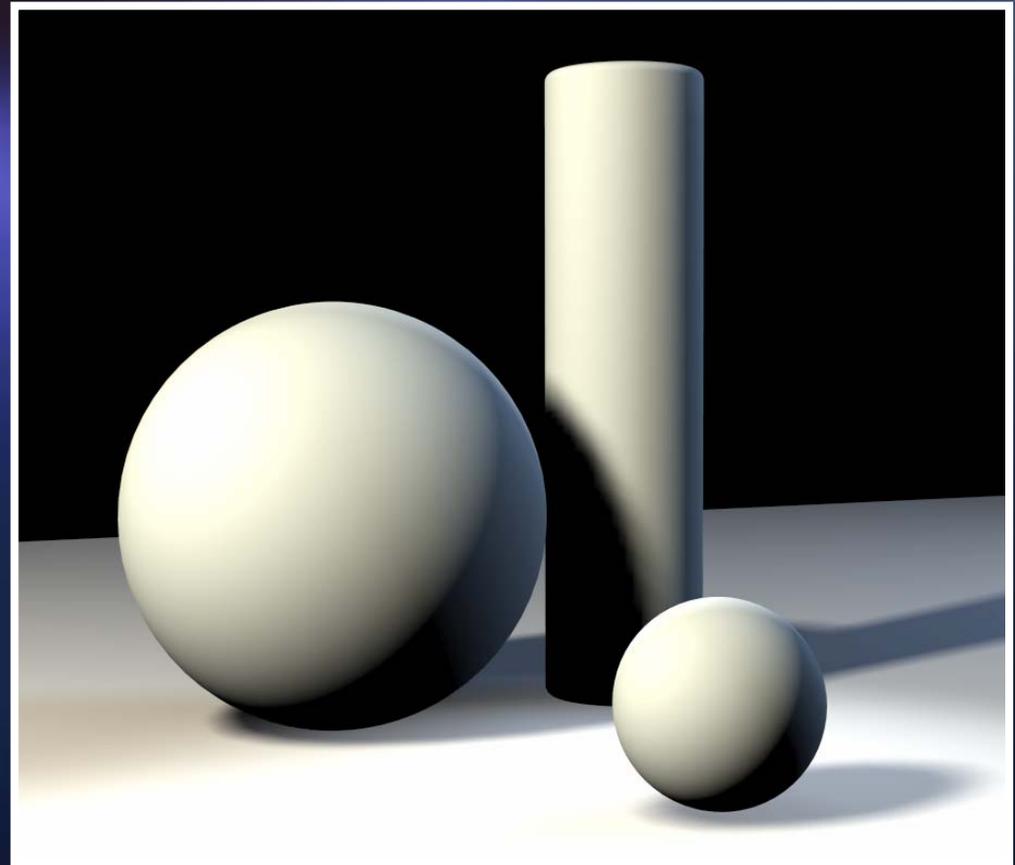
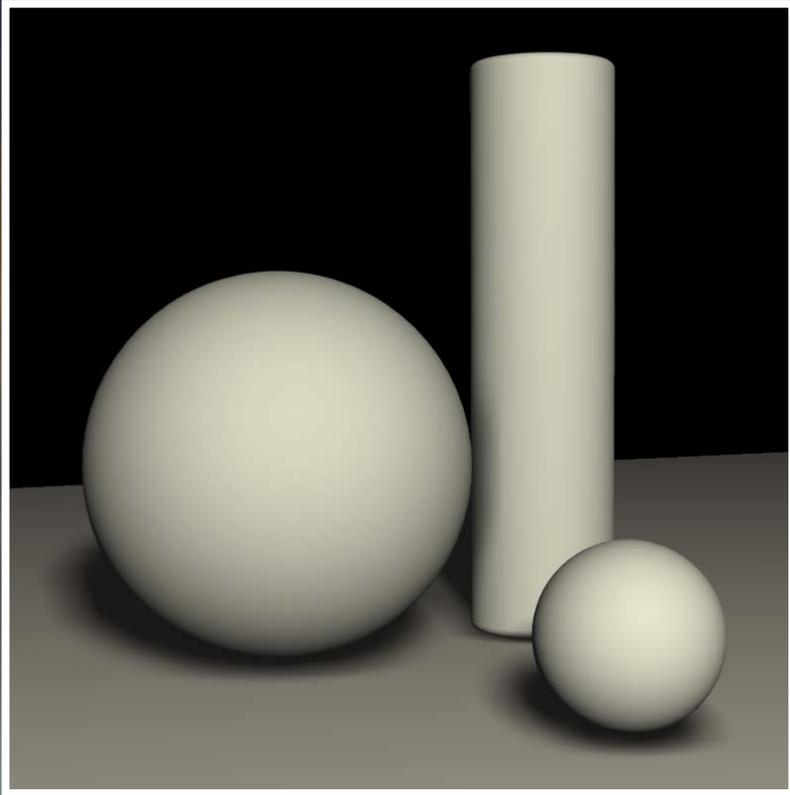
3 Punkt Lichtquelle einrichten : Das Rücklicht



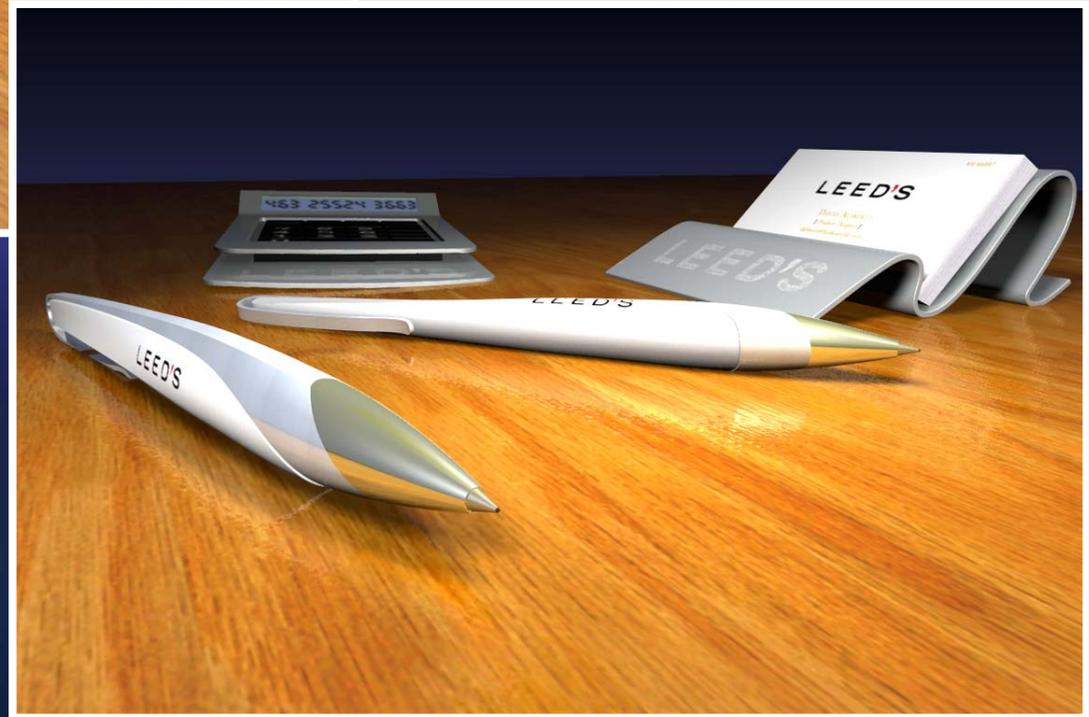
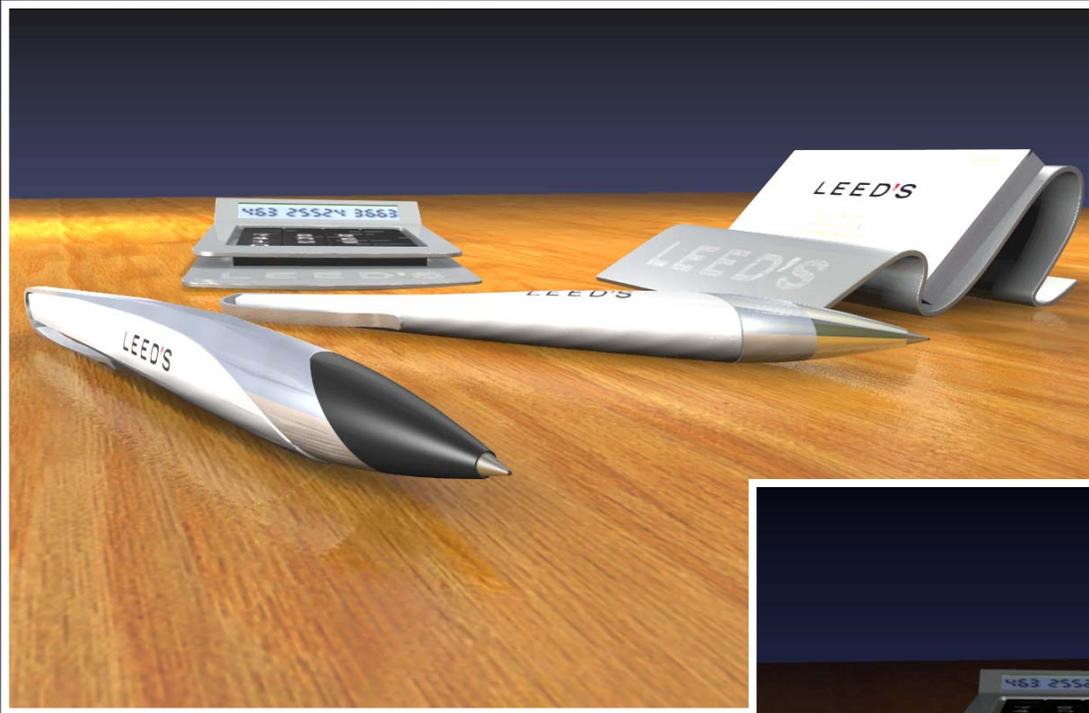
Beleuchten Sie Ihre Welt!

Anordnung und Beleuchtung

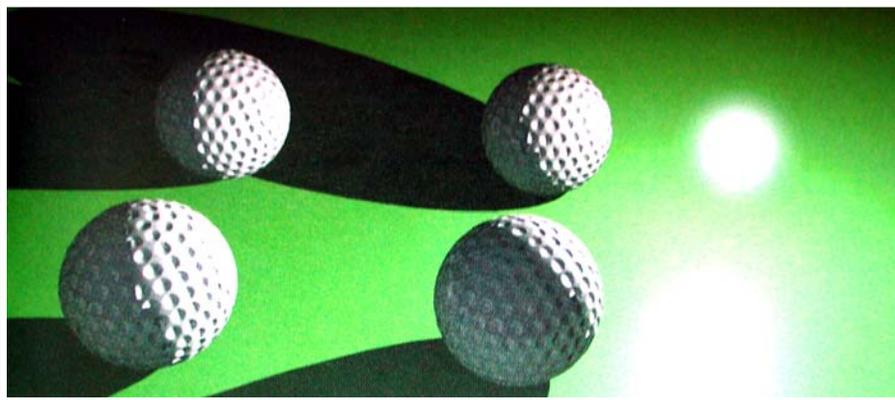
Licht gibt Form und Tiefe



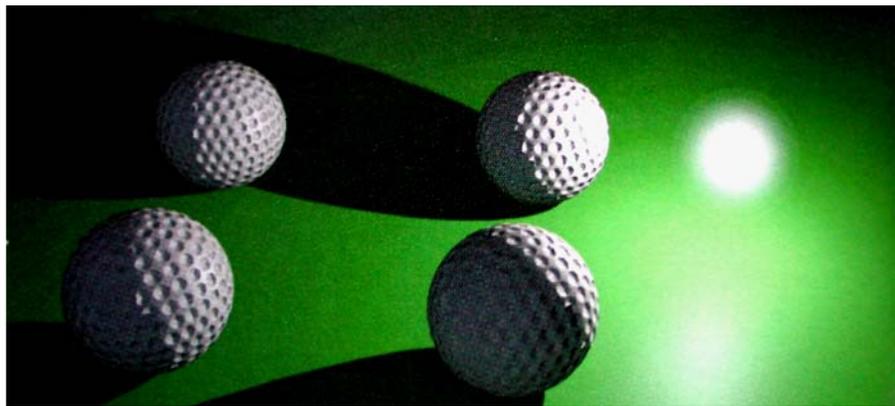
Licht weckt Interesse



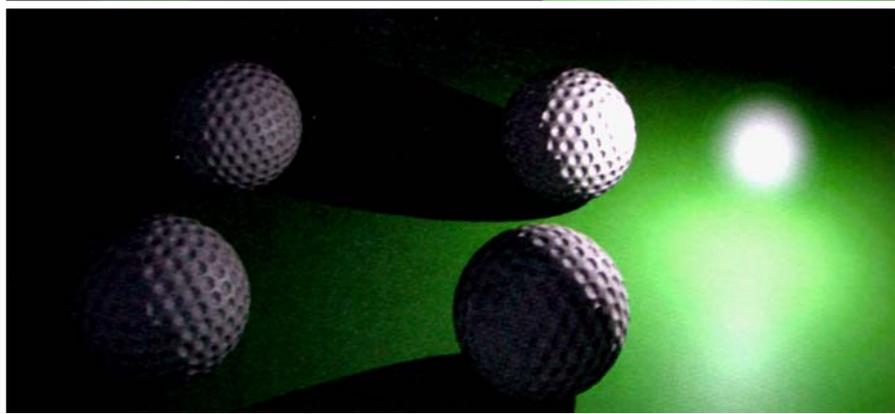
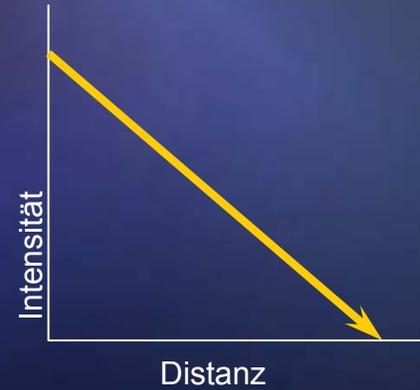
Echtes Licht verliert an Intensität durch Distanz



GLEICH



LINEAR



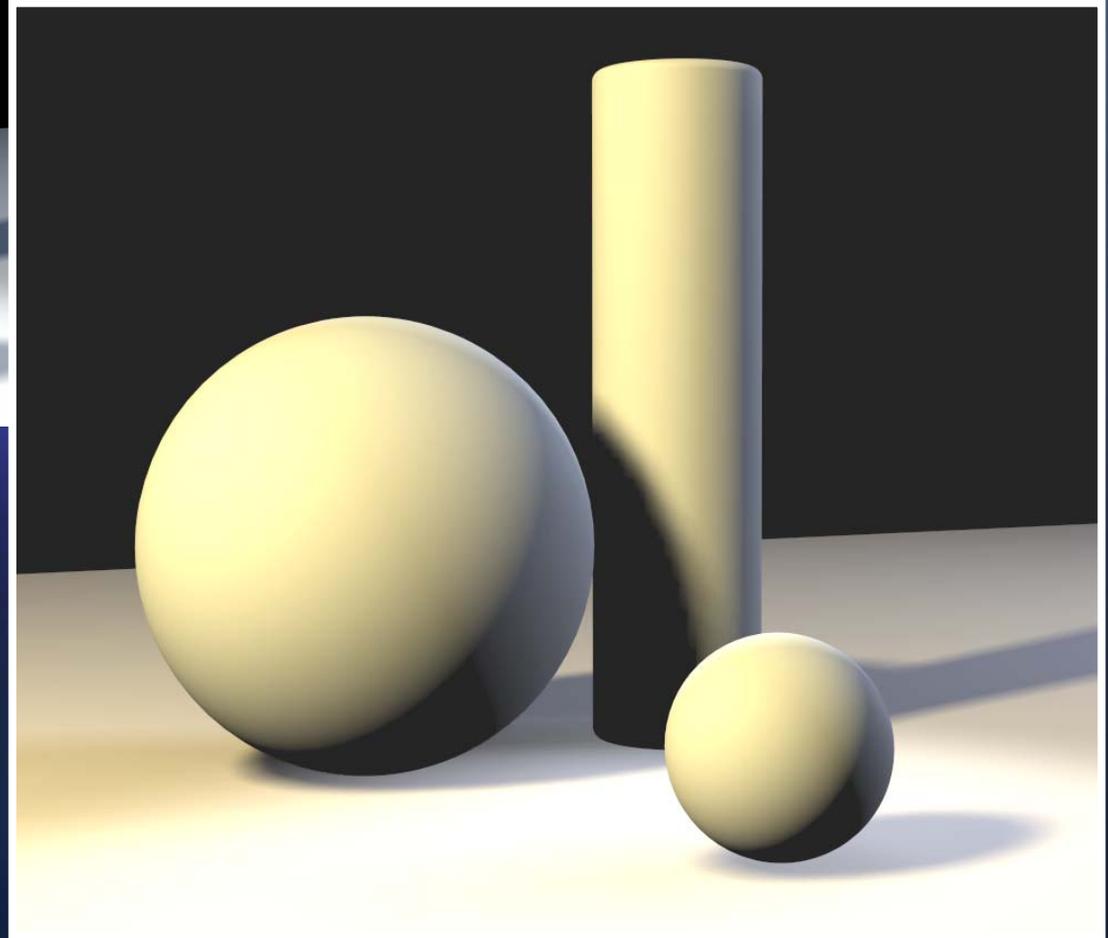
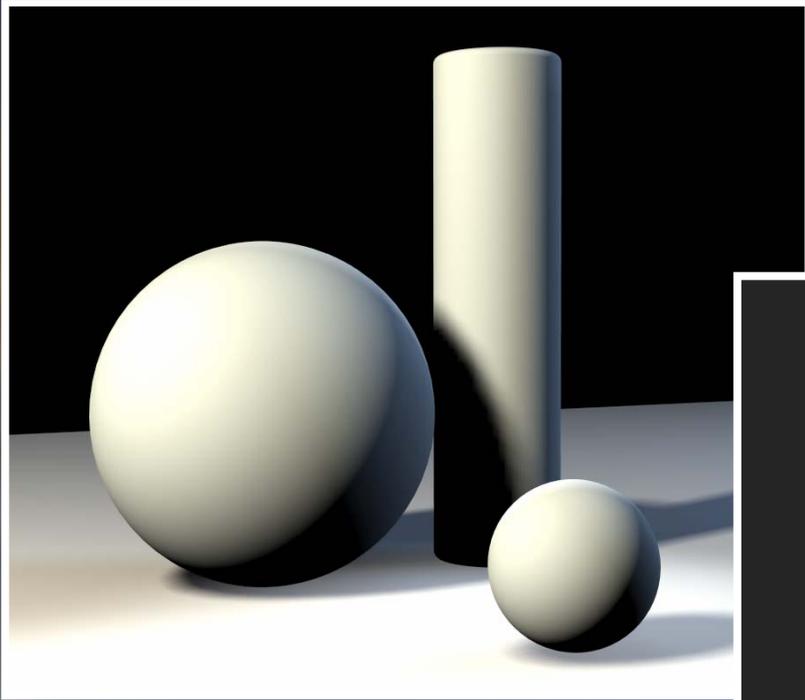
QUADRATISCH



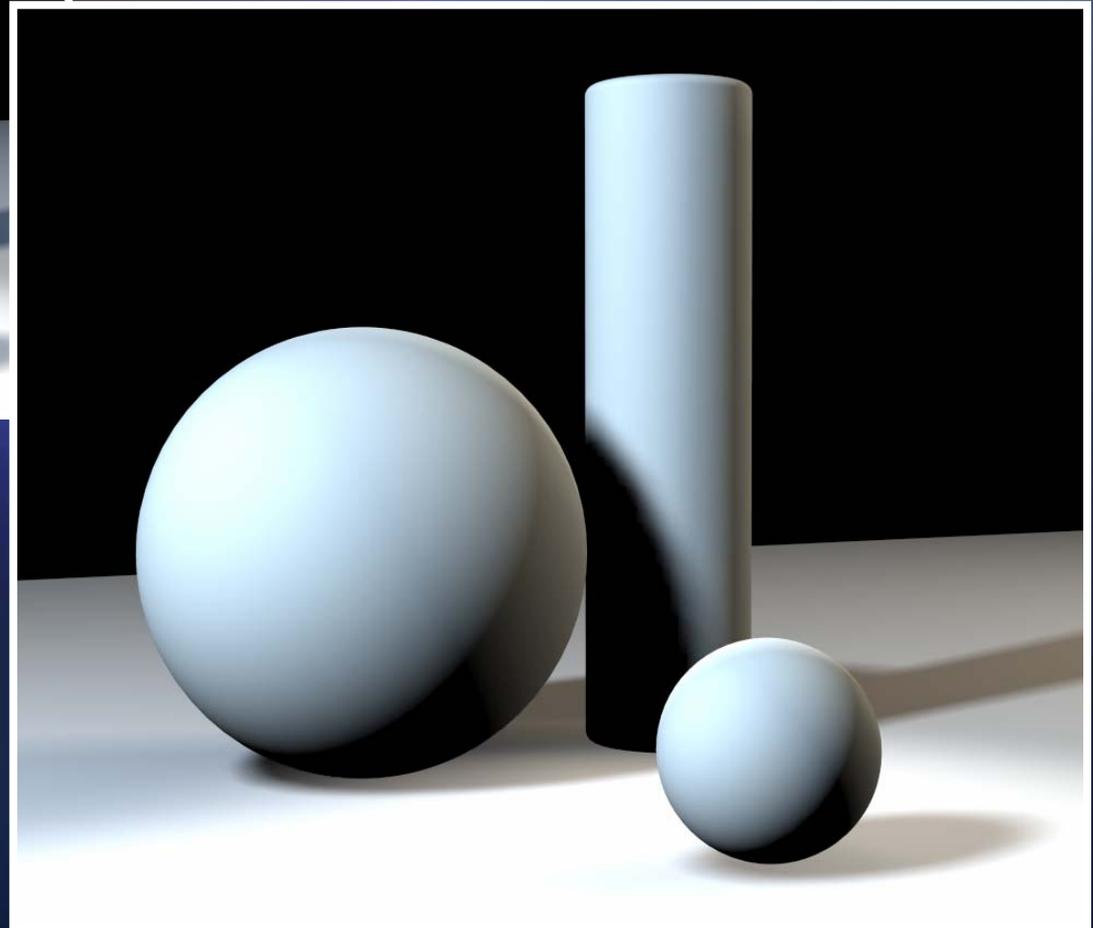
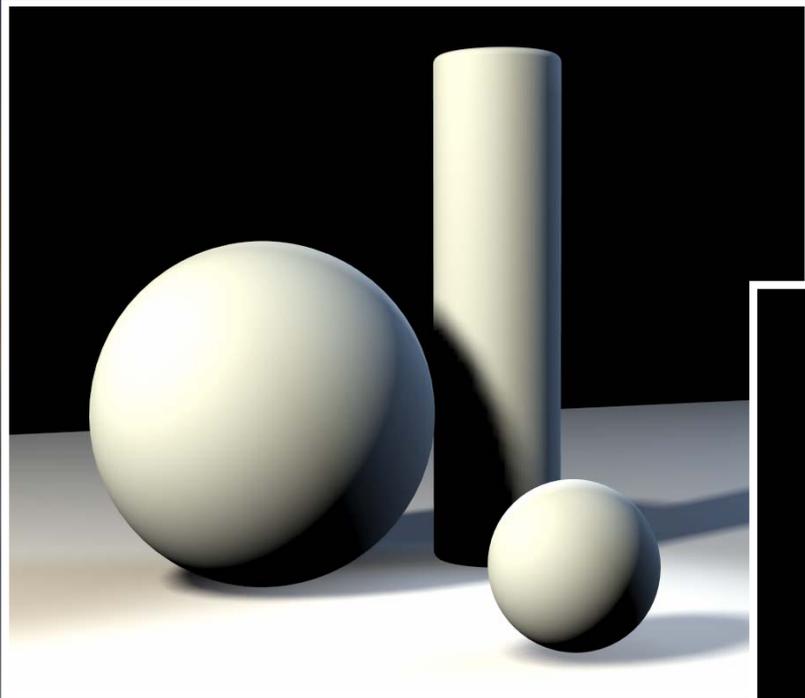
Beleuchten Sie Ihre Welt!

Licht, Farbe, Stimmung

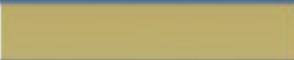
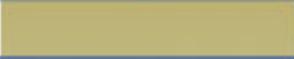
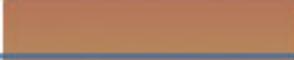
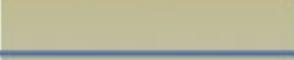
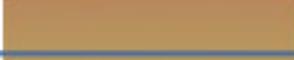
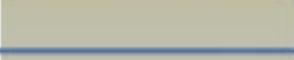
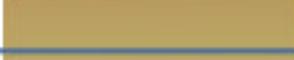
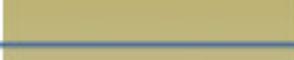
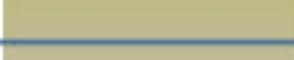
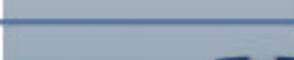
Licht und Farbe ergibt Stimmung



Licht und Farbe ergibt Stimmung



Licht und Farbe ergibt Stimmung

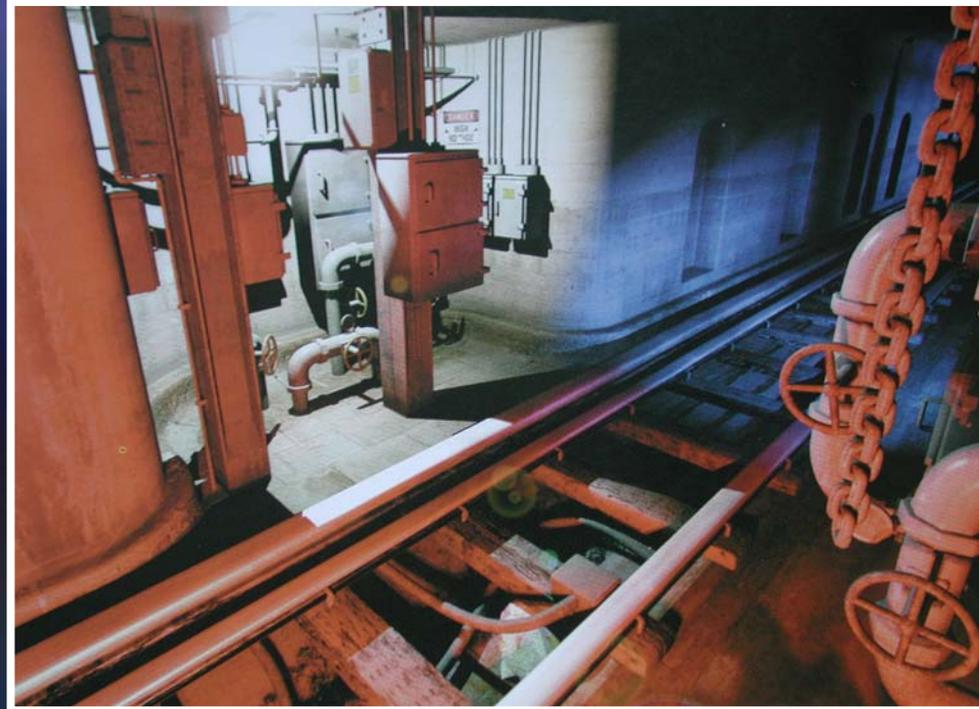
Degrees Kelvin	Type of Light Source	Indoor (3200k) Color Balance	Outdoor (5500k) Color Balance
1700-1800K	Match Flame		
1850-1930K	Candle Flame		
2000-3000K	Sun: At Sunrise or Sunset		
2500-2900K	Household Tungsten Bulbs		
3000K	Tungsten lamp 500W-1k		
3200-3500K	Quartz Lights		
3200-7500K	Fluorescent Lights		
3275K	Tungsten Lamp 2k		
3380K	Tungsten Lamp 5k, 10k		
5000-5400K	Sun: Direct at Noon		
5500-6500K	Daylight (Sun + Sky)		
5500-6500K	Sun: through clouds/haze		
6000-7500K	Sky: Overcast		
6500K	RGB Monitor (White Pt.)		
7000-8000K	Outdoor Shade Areas		
8000-10000K	Sky: Partly Cloudy		

Based on information from the book [digital] Lighting & Rendering

Chart and colors (c)2001 Jeremy Birn for 3DU.com



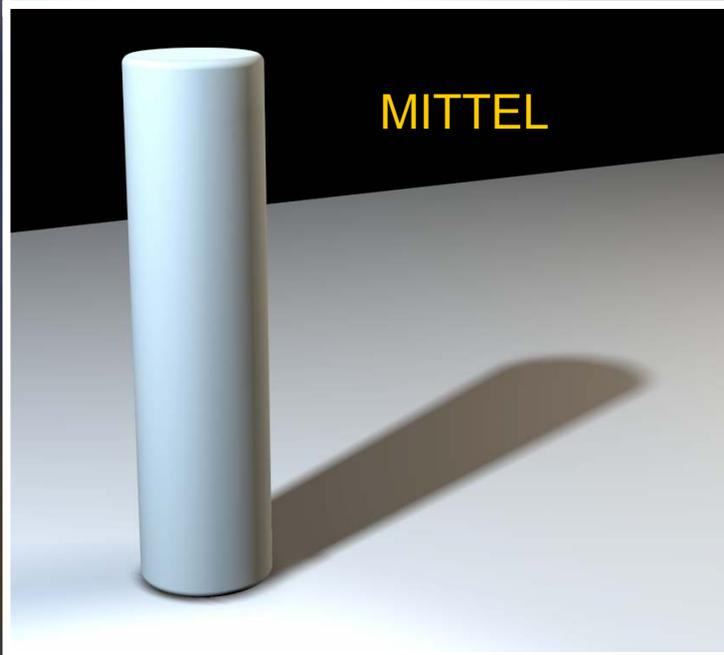
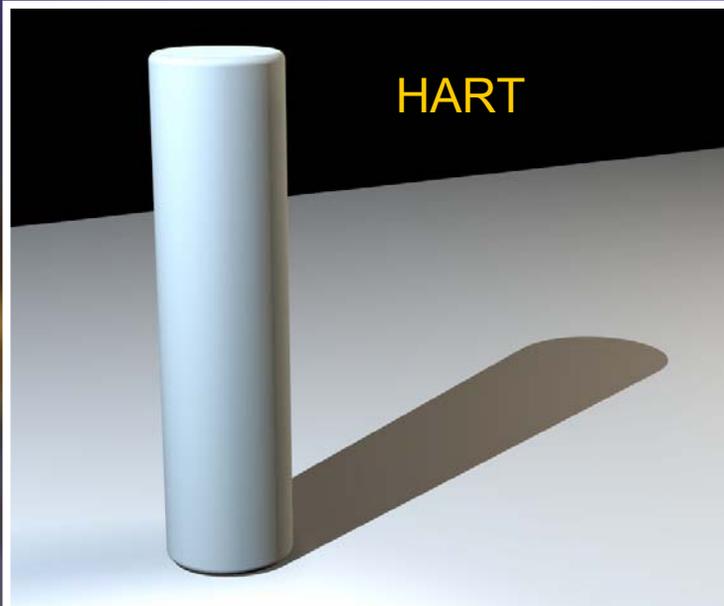
Licht und Farbe ergibt Stimmung



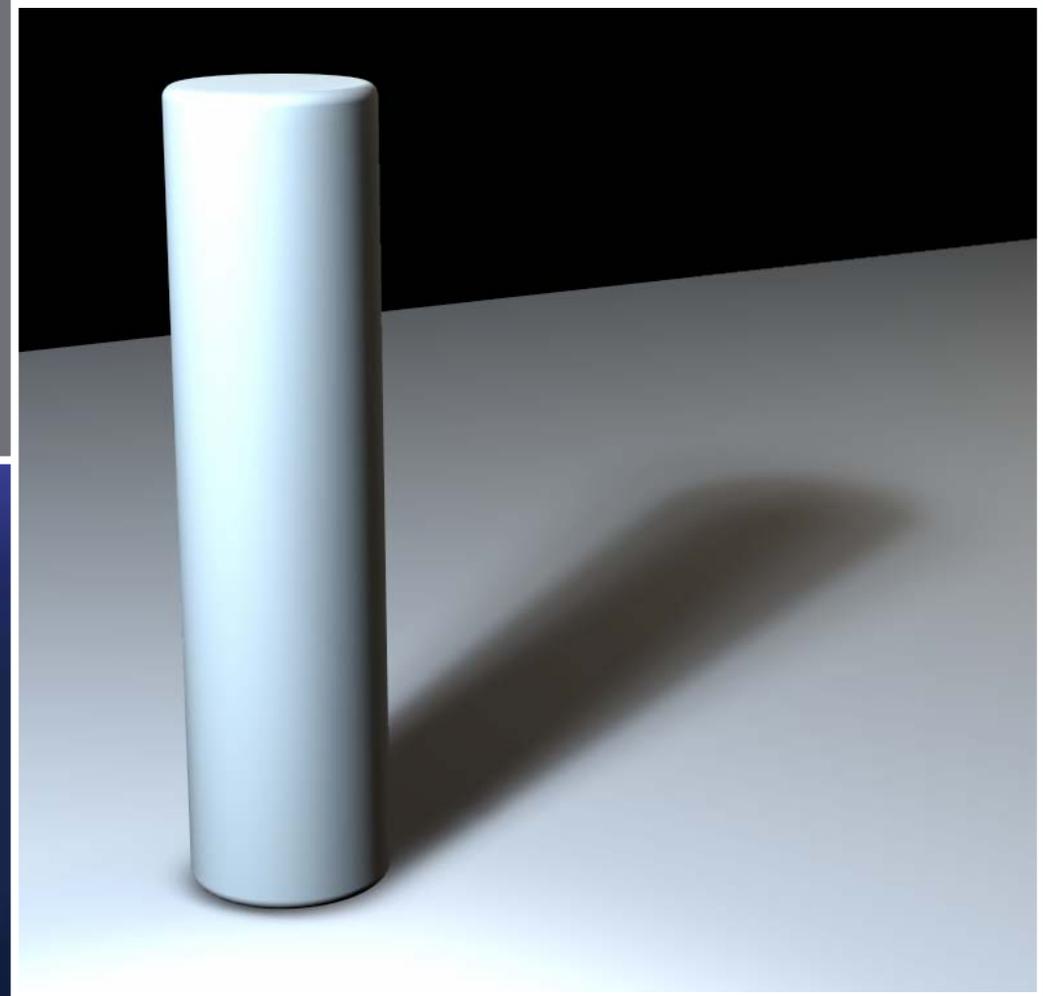
Beleuchten Sie Ihre Welt!

Schatten

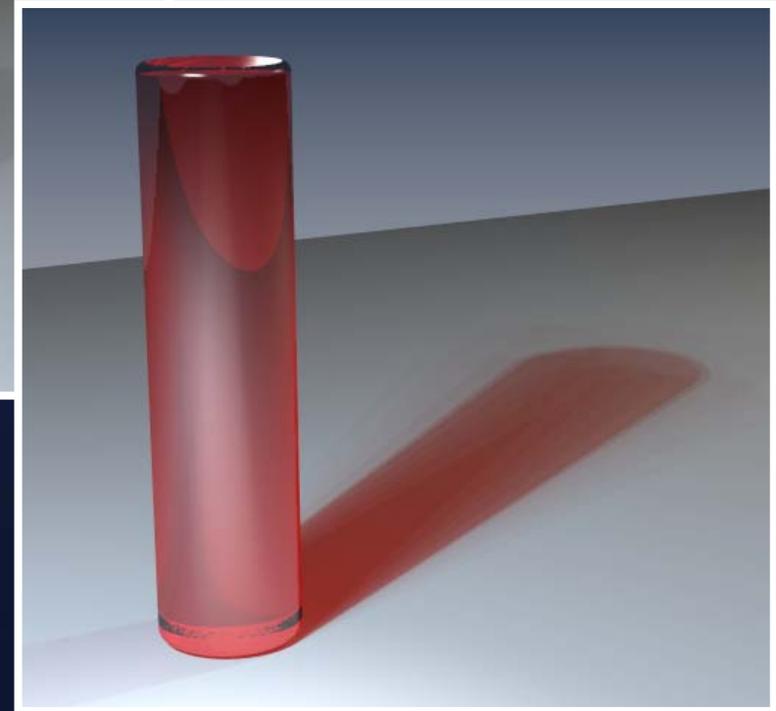
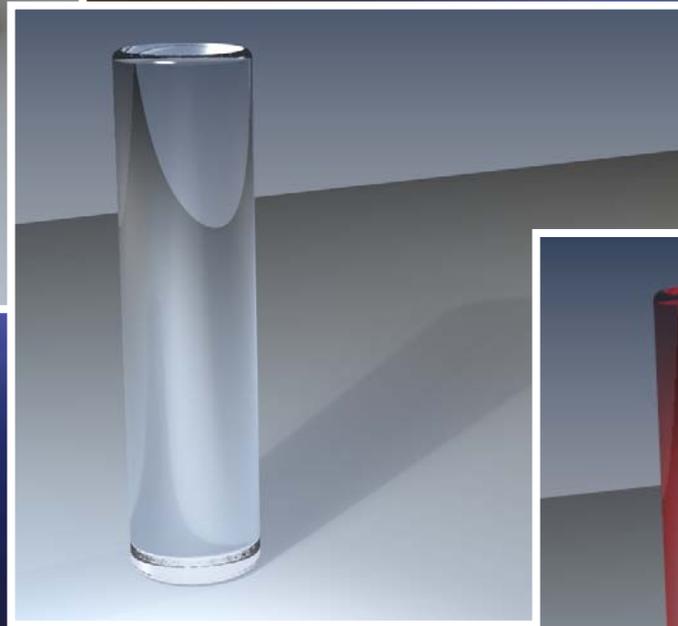
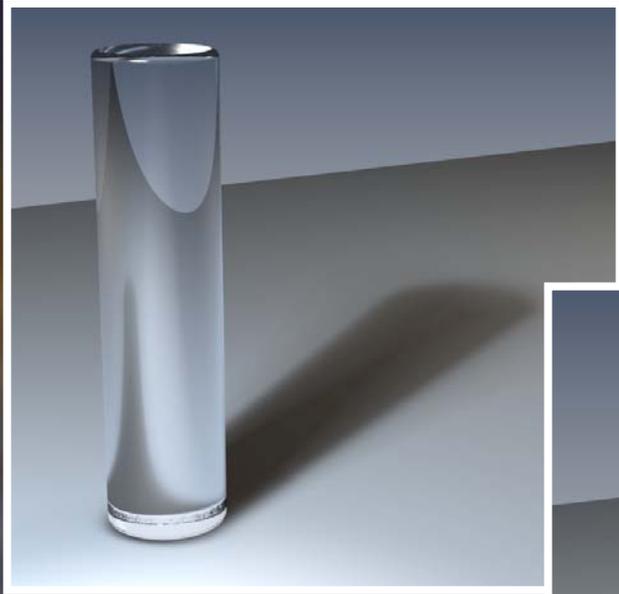
Schatten - Hart oder Weich ?



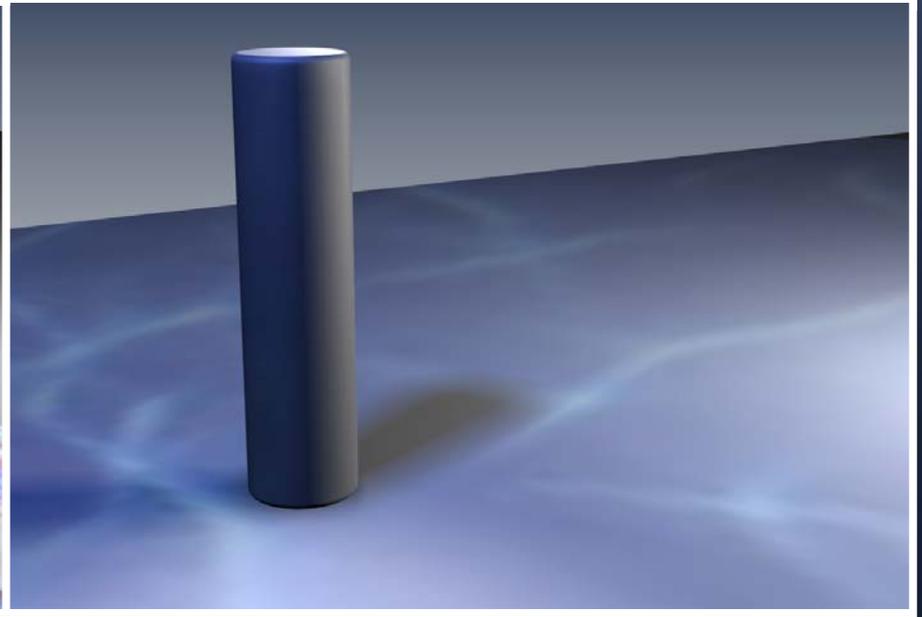
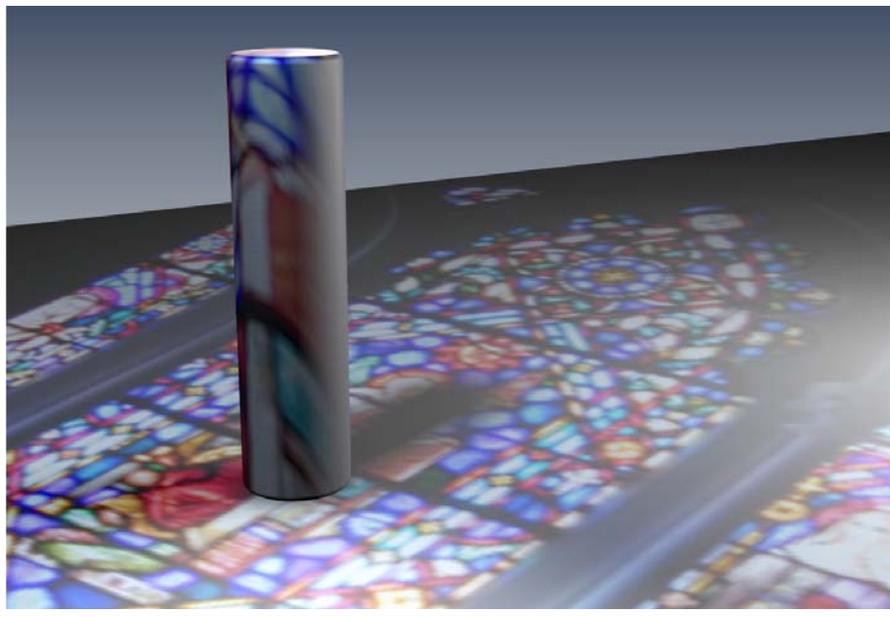
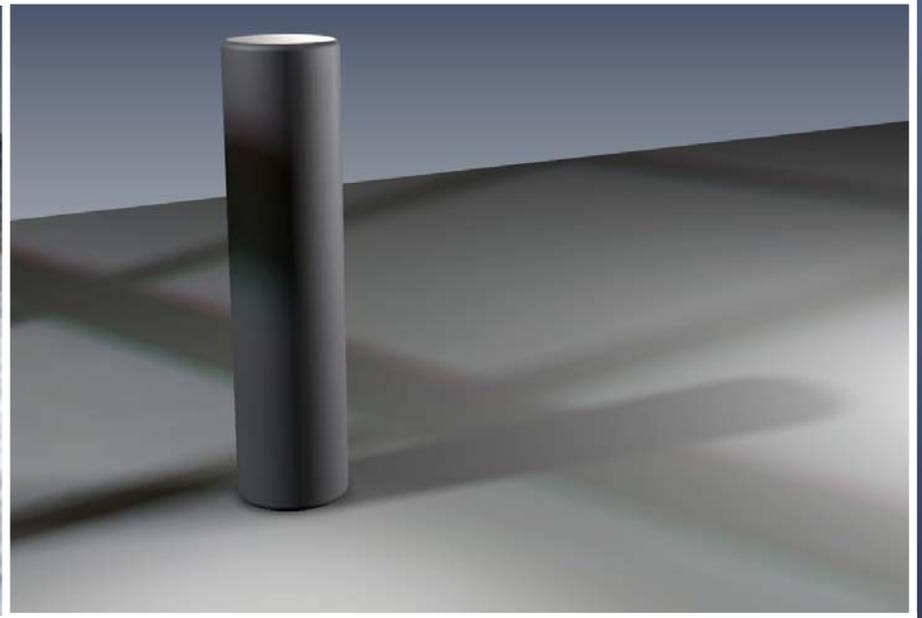
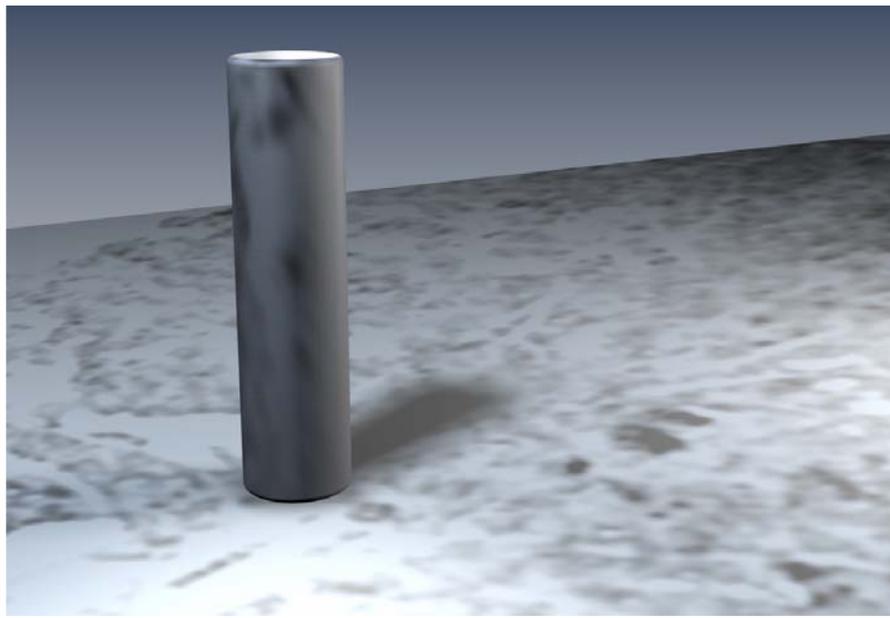
Schatten – Simulation von Umgebungslicht



Schatten - Transparente Schatten



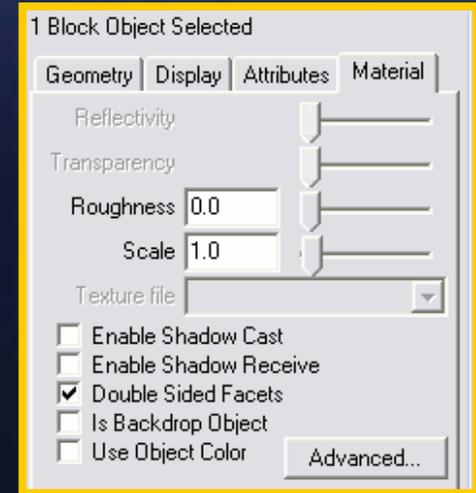
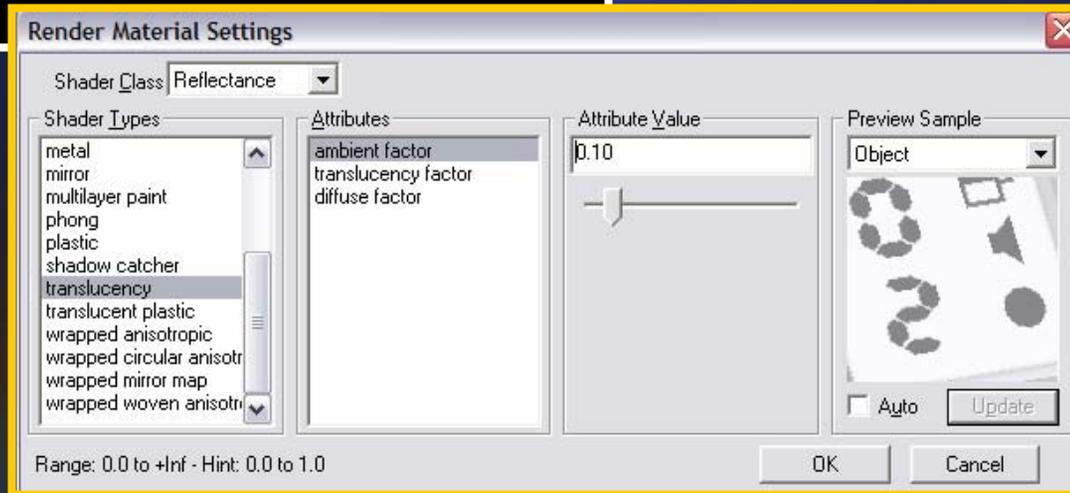
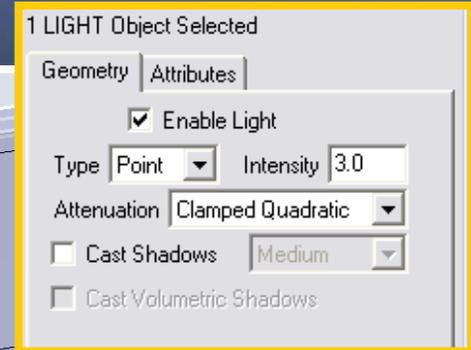
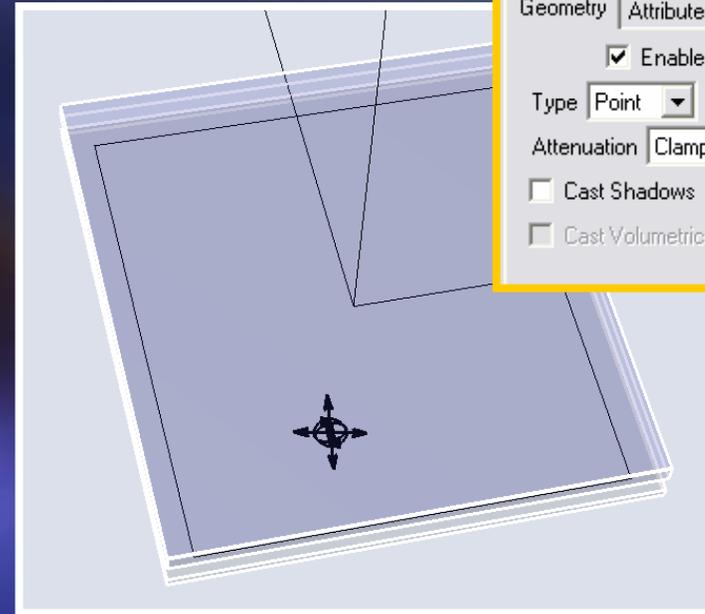
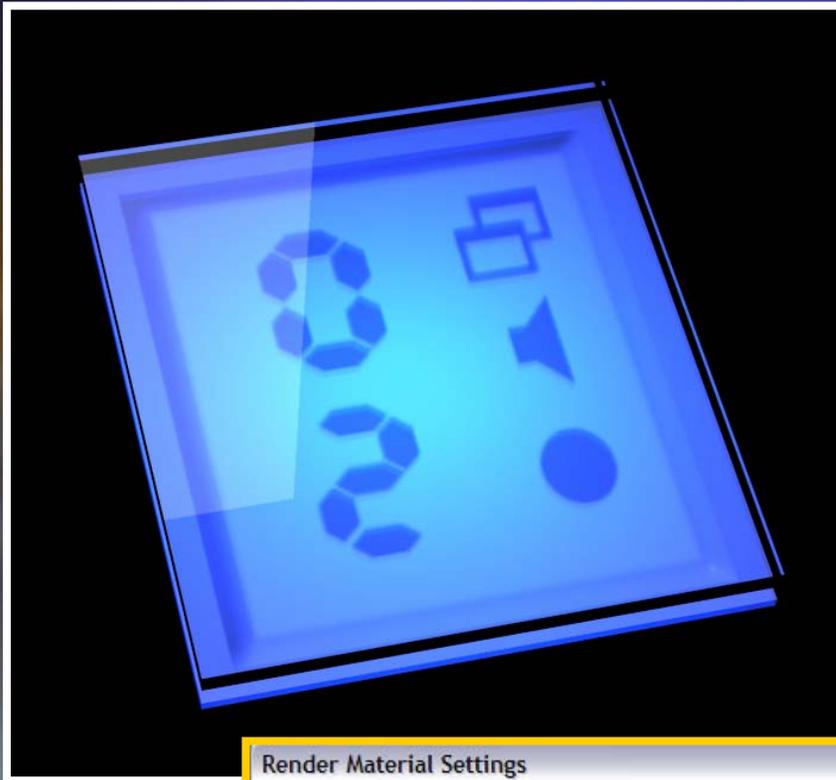
Schatten – Erstellen von Schatten mit “Gel” Images



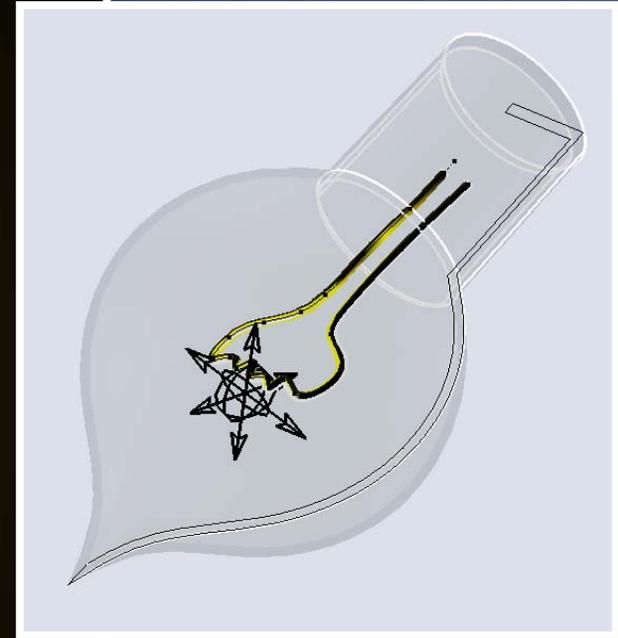
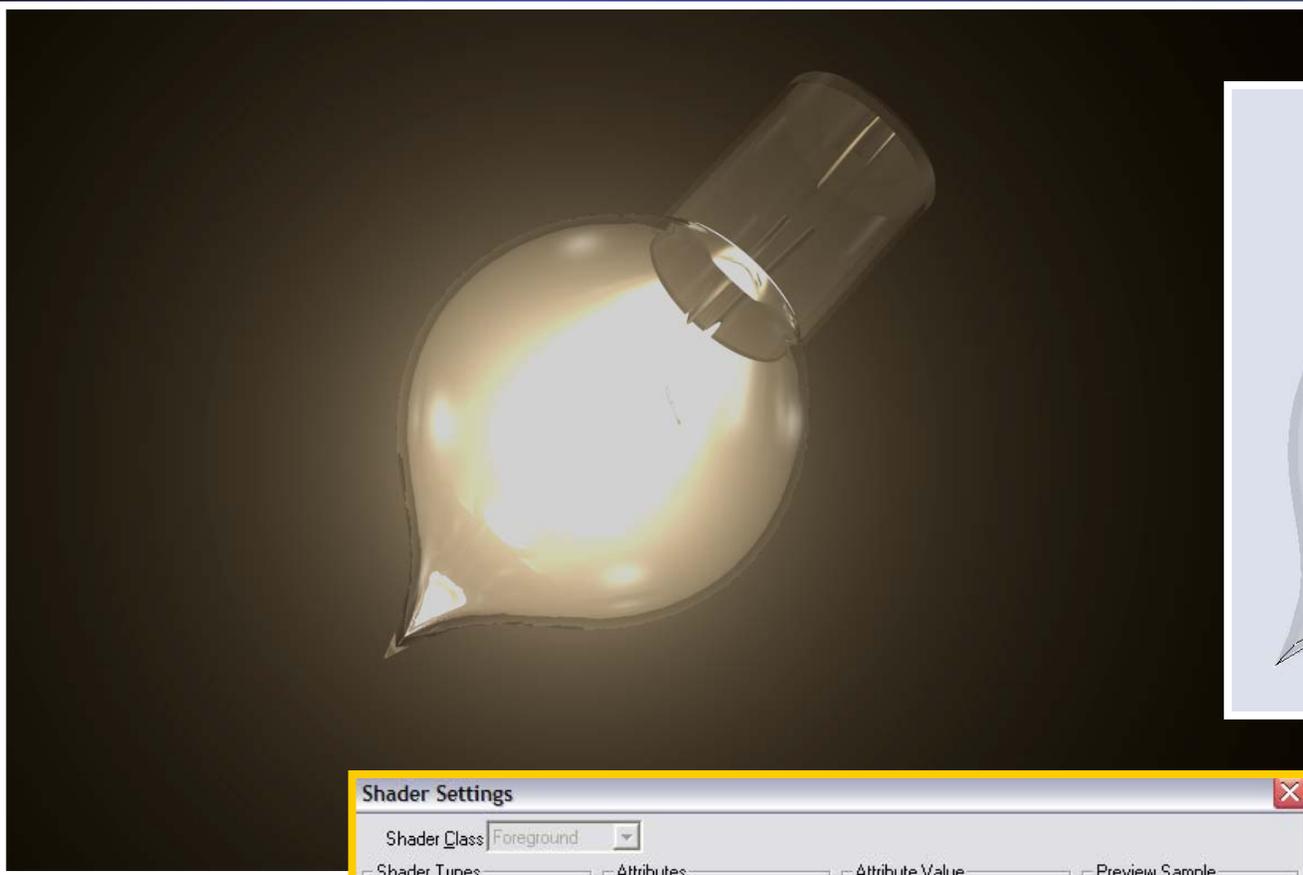
Beleuchten Sie Ihre Welt!

Leuchtende Objekte

Leuchtende Objekte – Ein digitales Display



Leuchtende Objekte – Eine Lampenbirne



Shader Settings

Shader Class: **Foreground**

Shader Types	Attributes	Attribute Value	Preview Sample
depth cue	fog density	0.0010	Cone
fog			
fog light			<input type="checkbox"/> Auto <input type="button" value="Update"/>
ground fog			
none			
scattering medium			
snow			

Range: 0.0 to +Inf - Hint: 0.0 to 100.0

Edit Object

1 LIGHT Object Selected

Geometry | Attributes

Enable Light

Type: **Point** Intensity: **300.0**

Attenuation: **Clamped Quadratic**

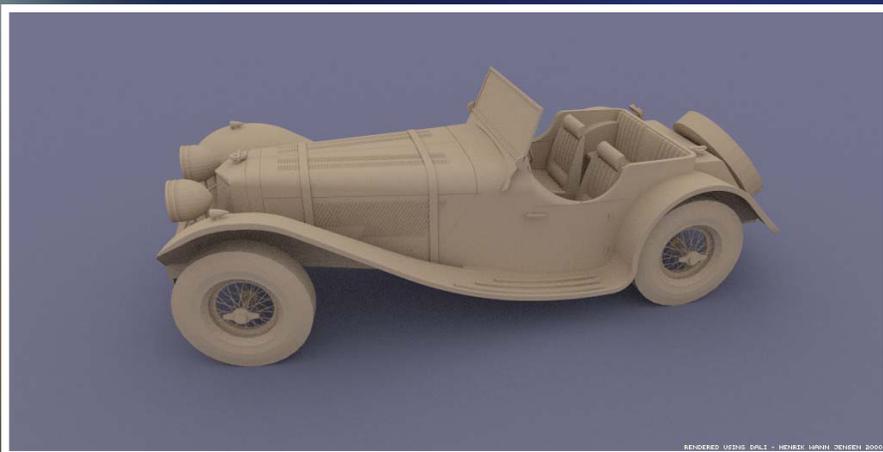
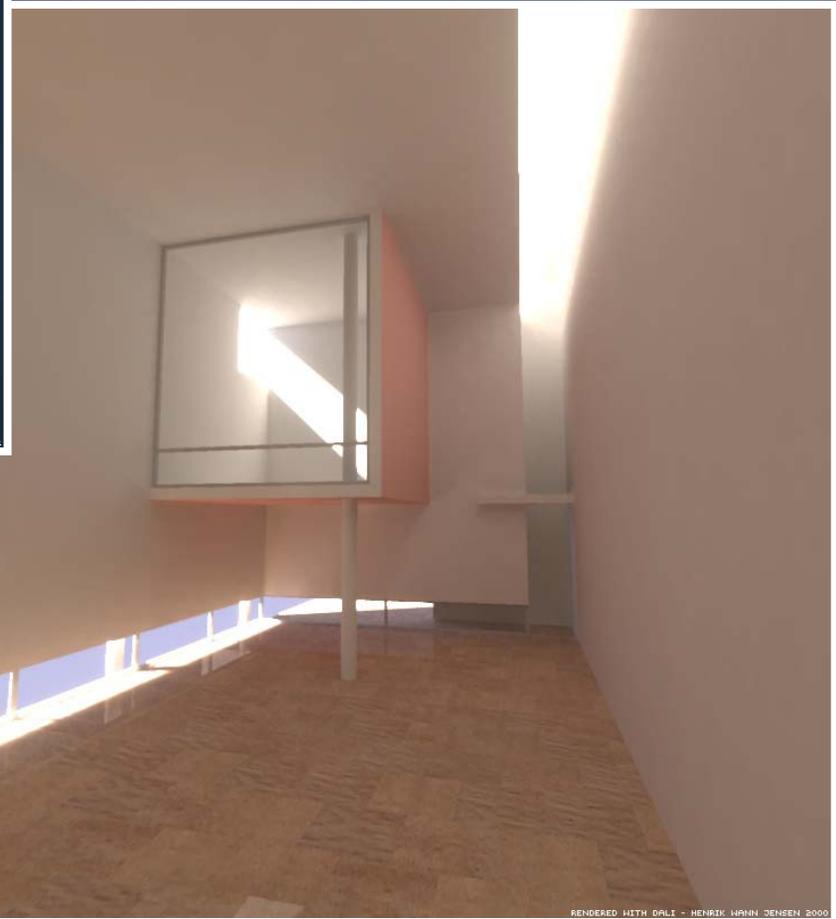
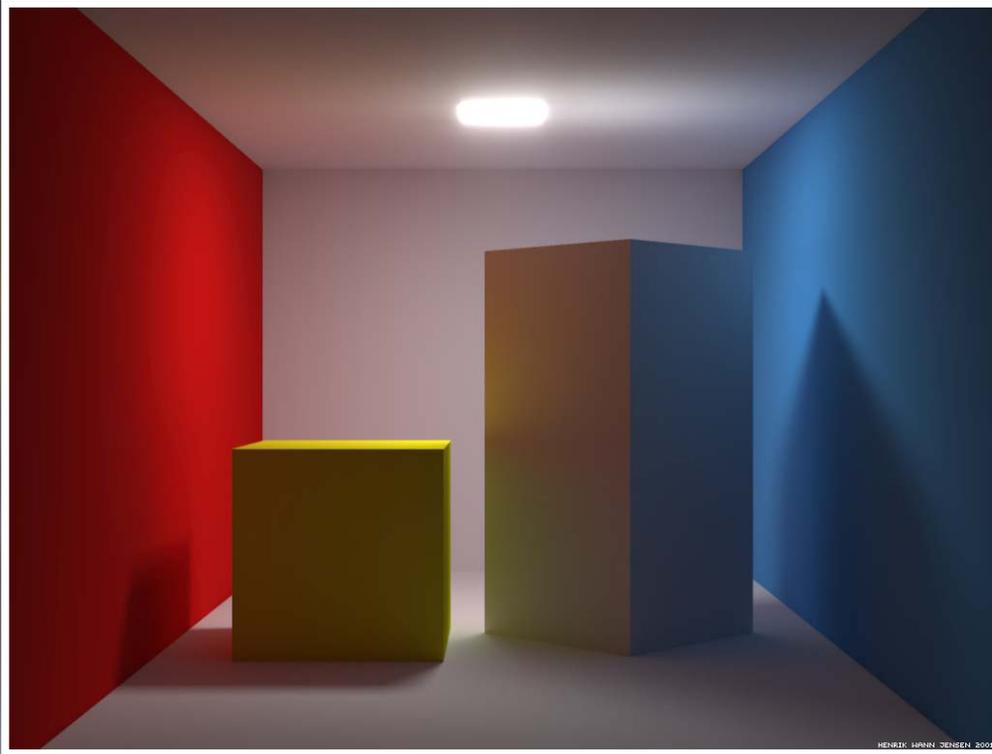
Cast Shadows **Blurry**

Cast Volumetric Shadows

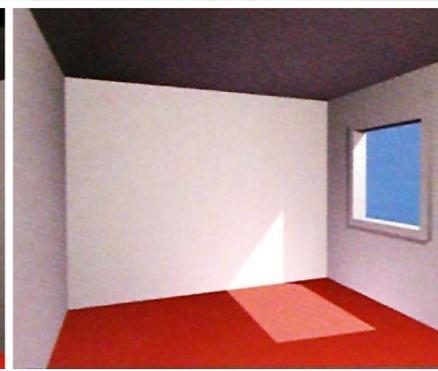
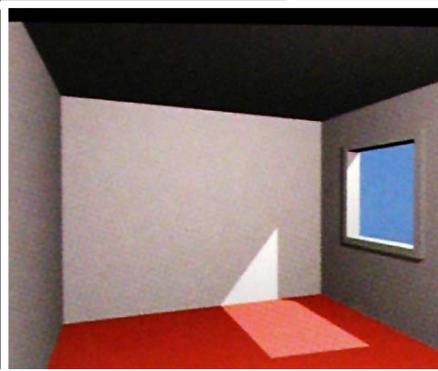
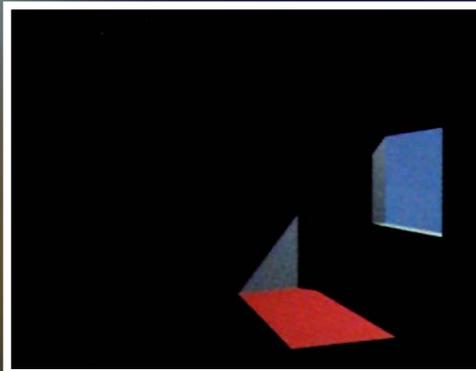
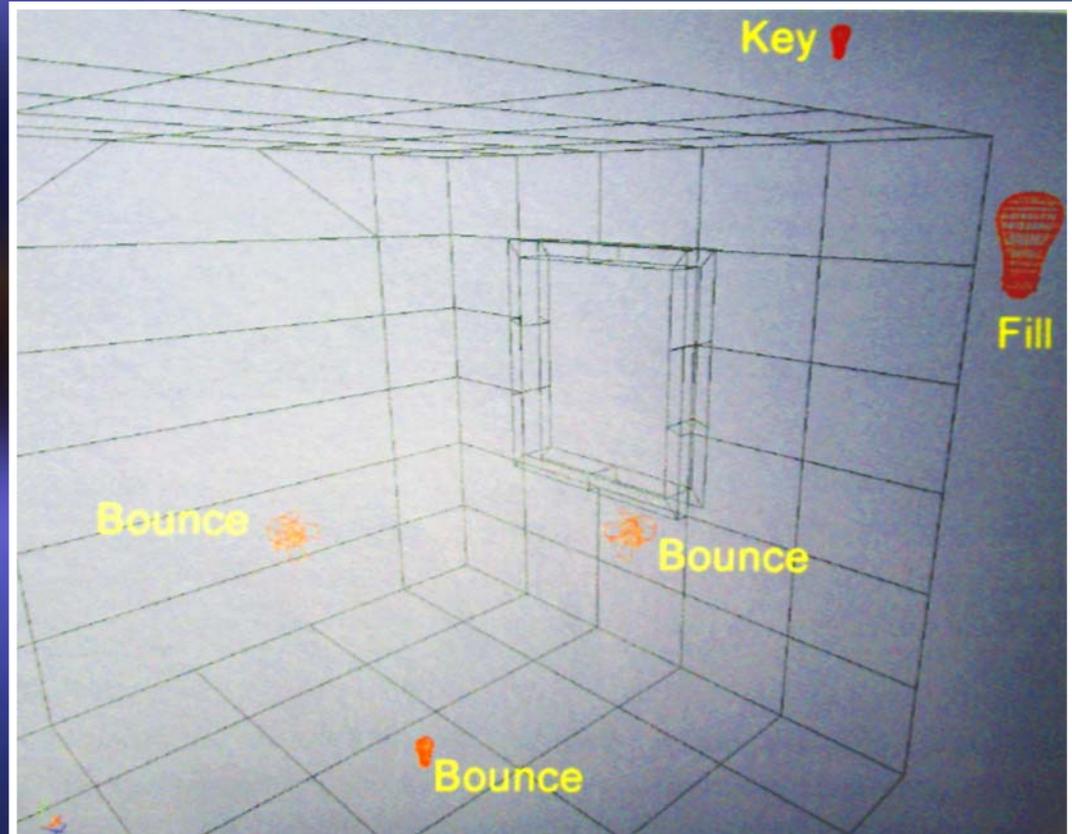
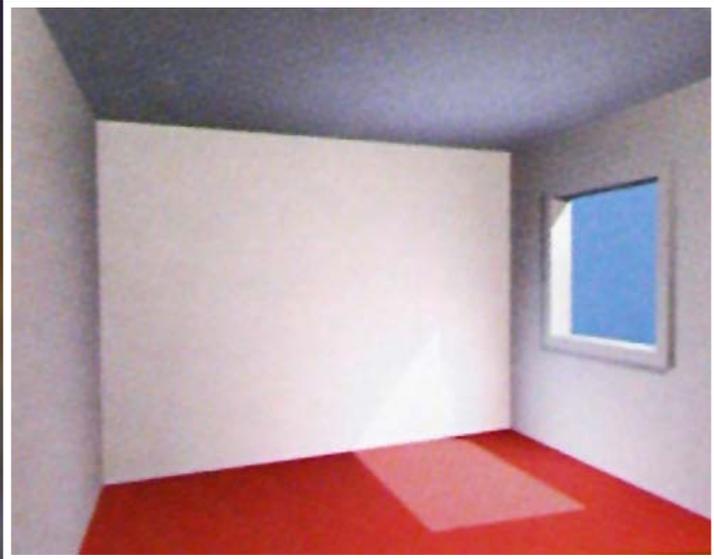
Beleuchten Sie Ihre Welt!

Fortgeschrittene Beleuchtung

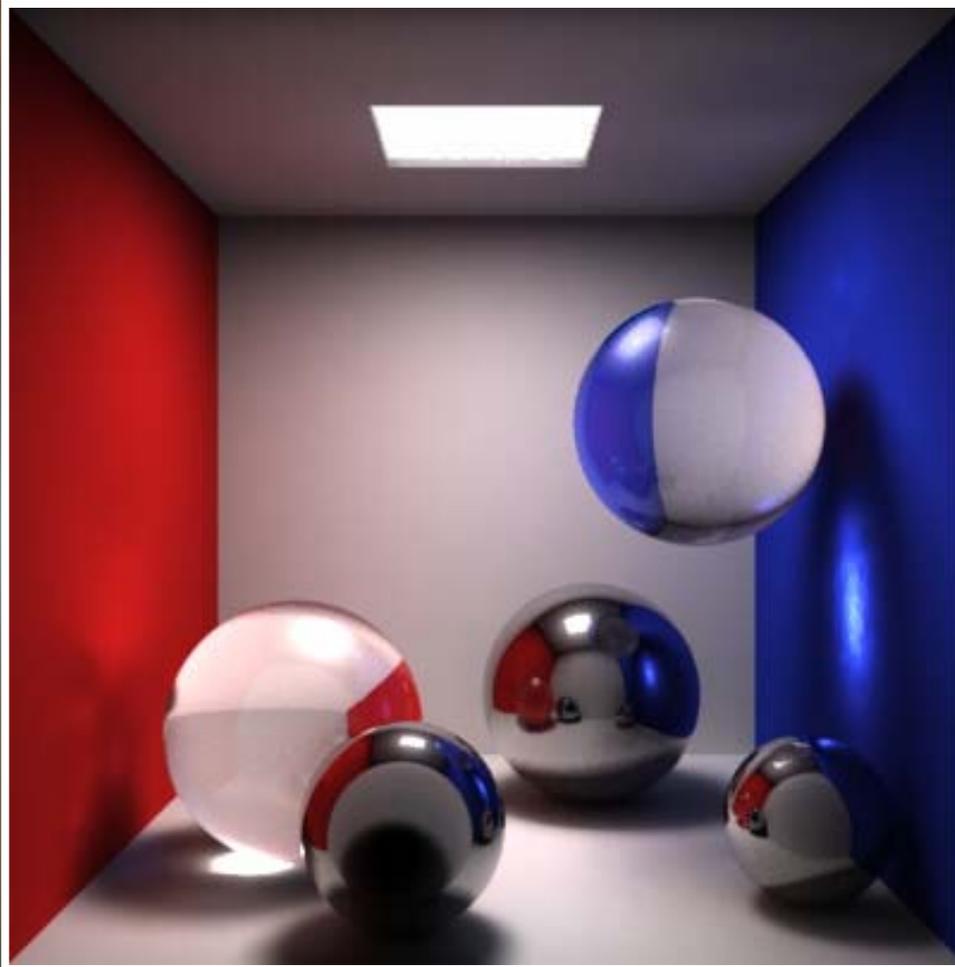
Fortgeschrittene Beleuchtung: Was ist Indirekte Illumination



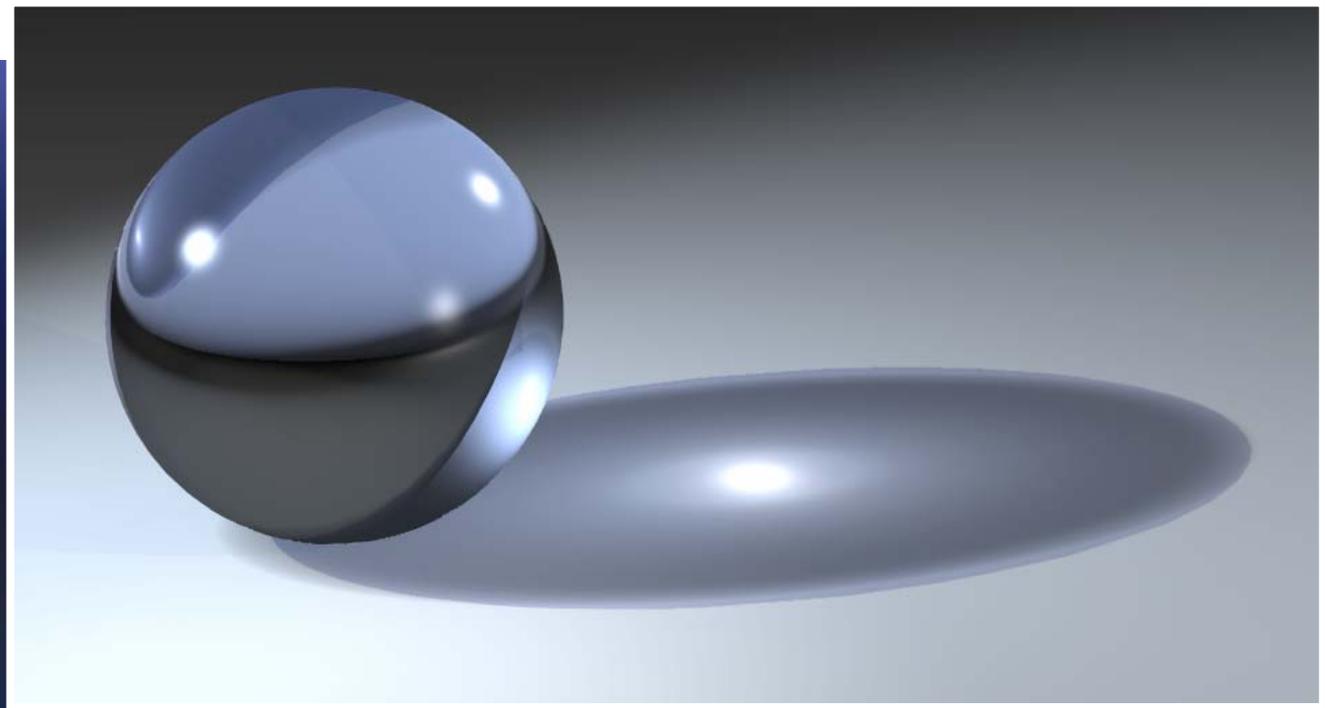
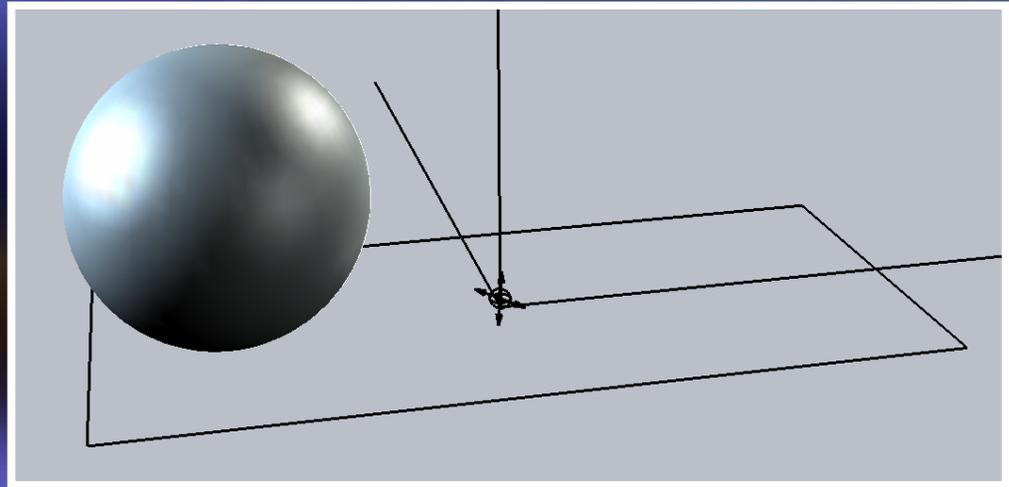
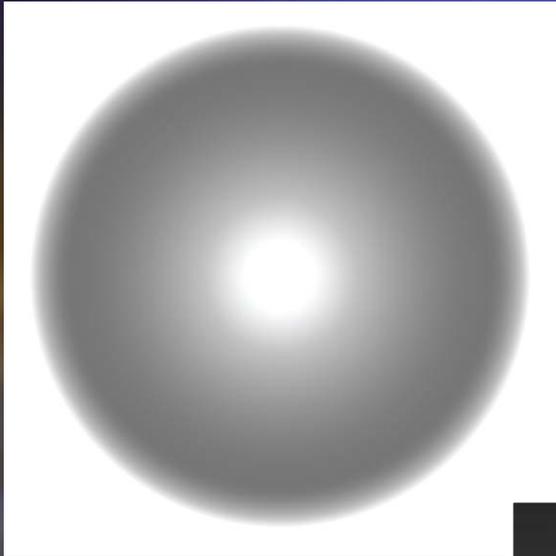
Fortgeschrittene Beleuchtung: Indirekte Illumination



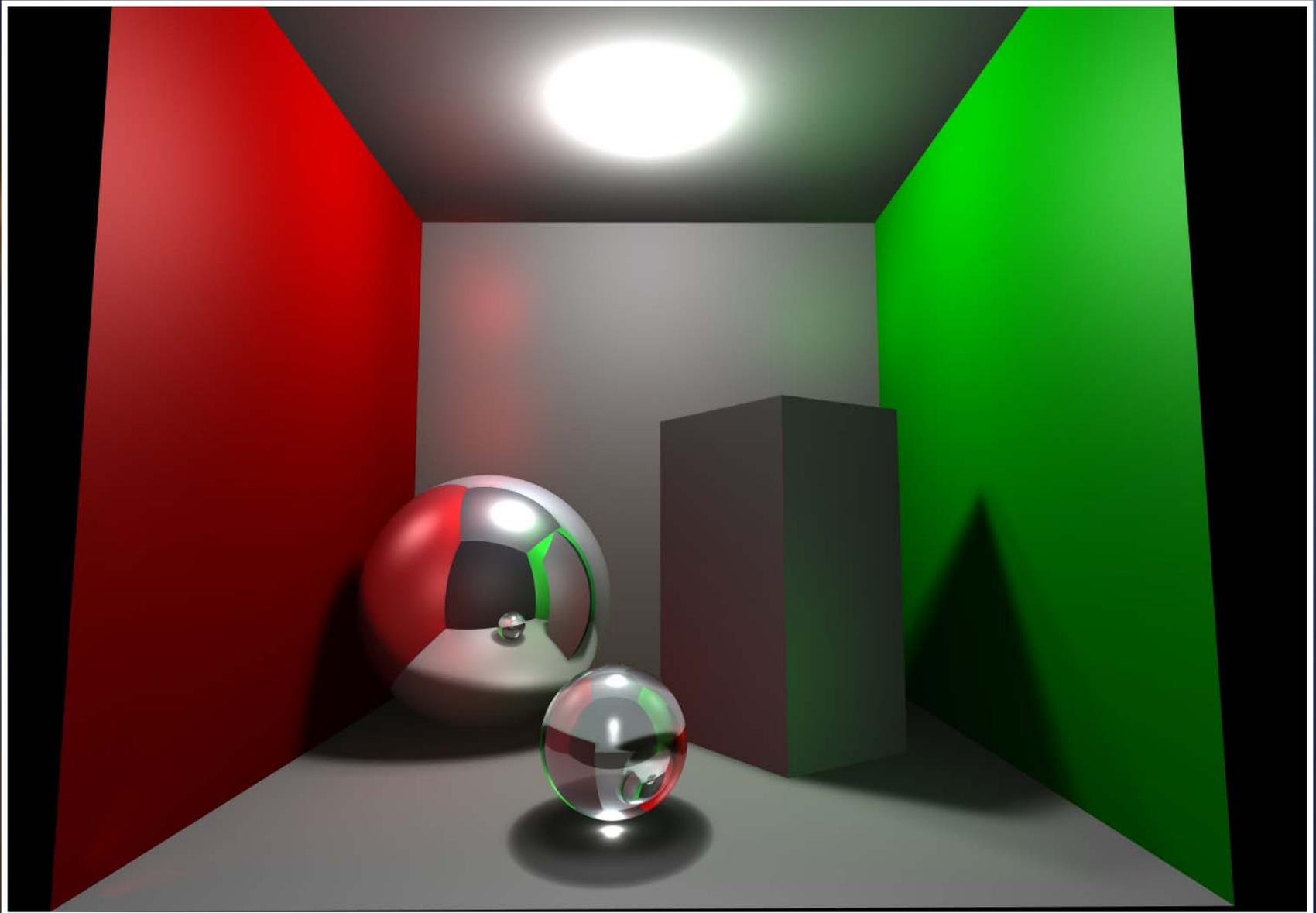
Lichtbrennpunkt (Caustics)



Lichtbrennpunkt (Caustics)



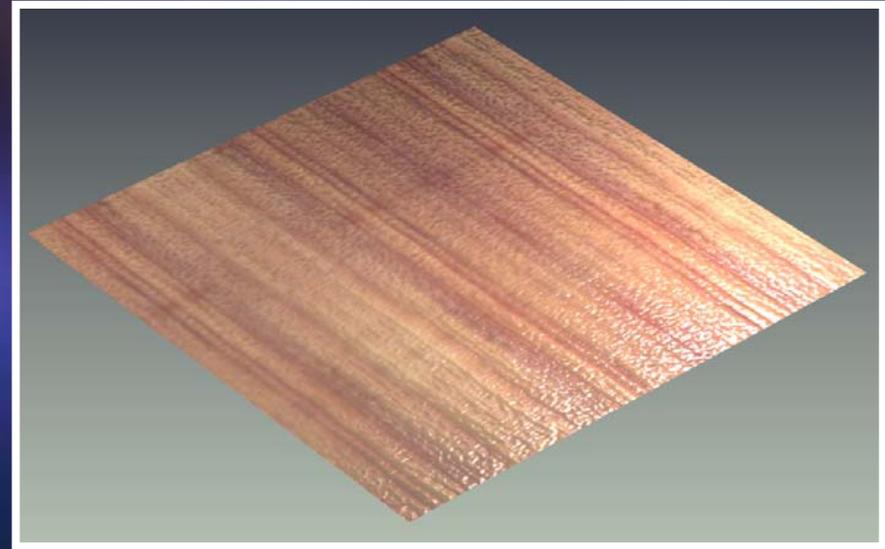
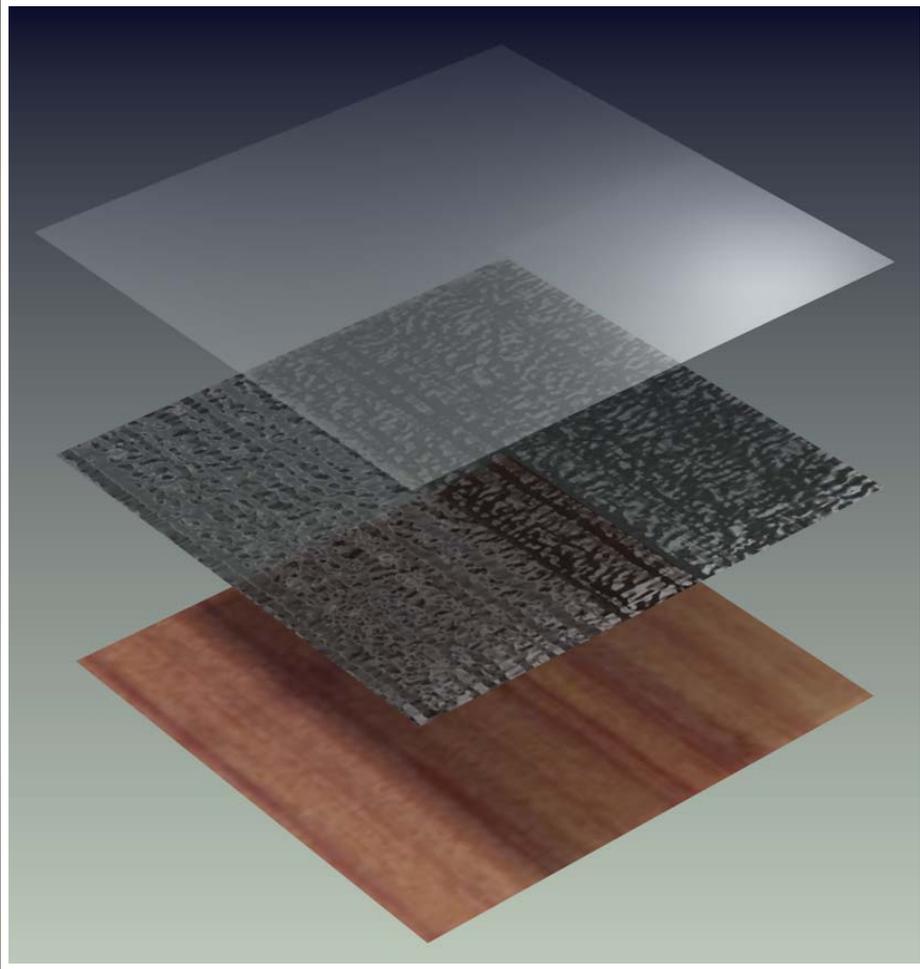
Lichtbrennpunkt und Indirekte Illumination



Verleihen Sie Ihrer Welt Leben!

Materialien Texturen

Materialien sind wie eine Hautschicht



Attribute der "Reflectance" Kategorie und was Sie bewirken

Ambience

Diffuse

Specular

Roughness

LOW



MEDIUM



HIGH



“Reflectance” Attribute Kombiniert



LOW

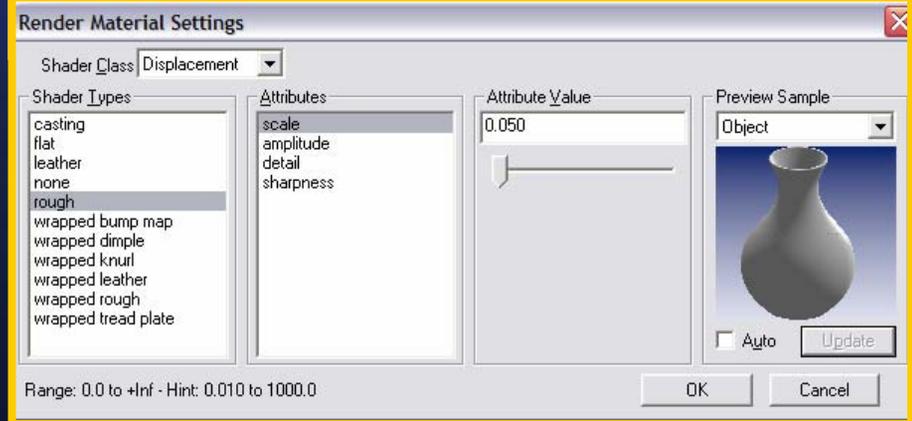
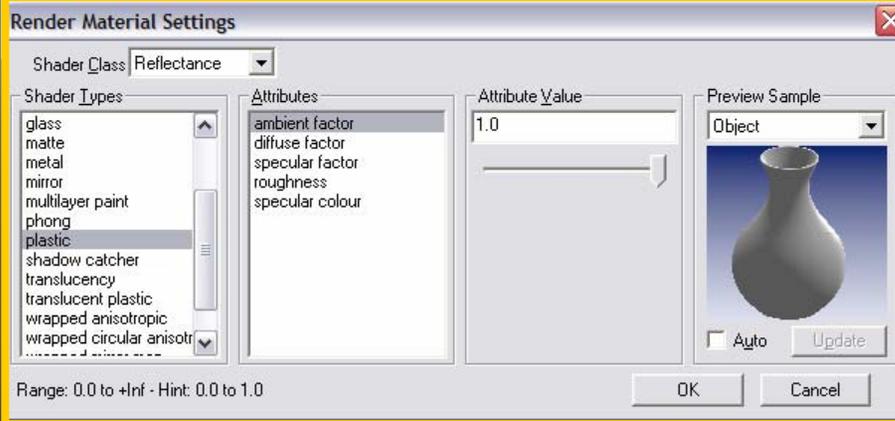


MEDIUM

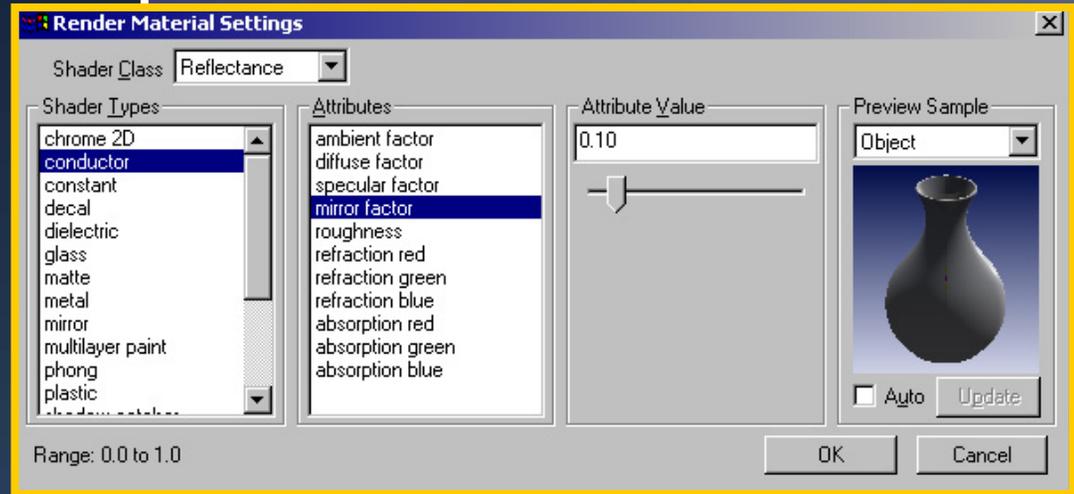
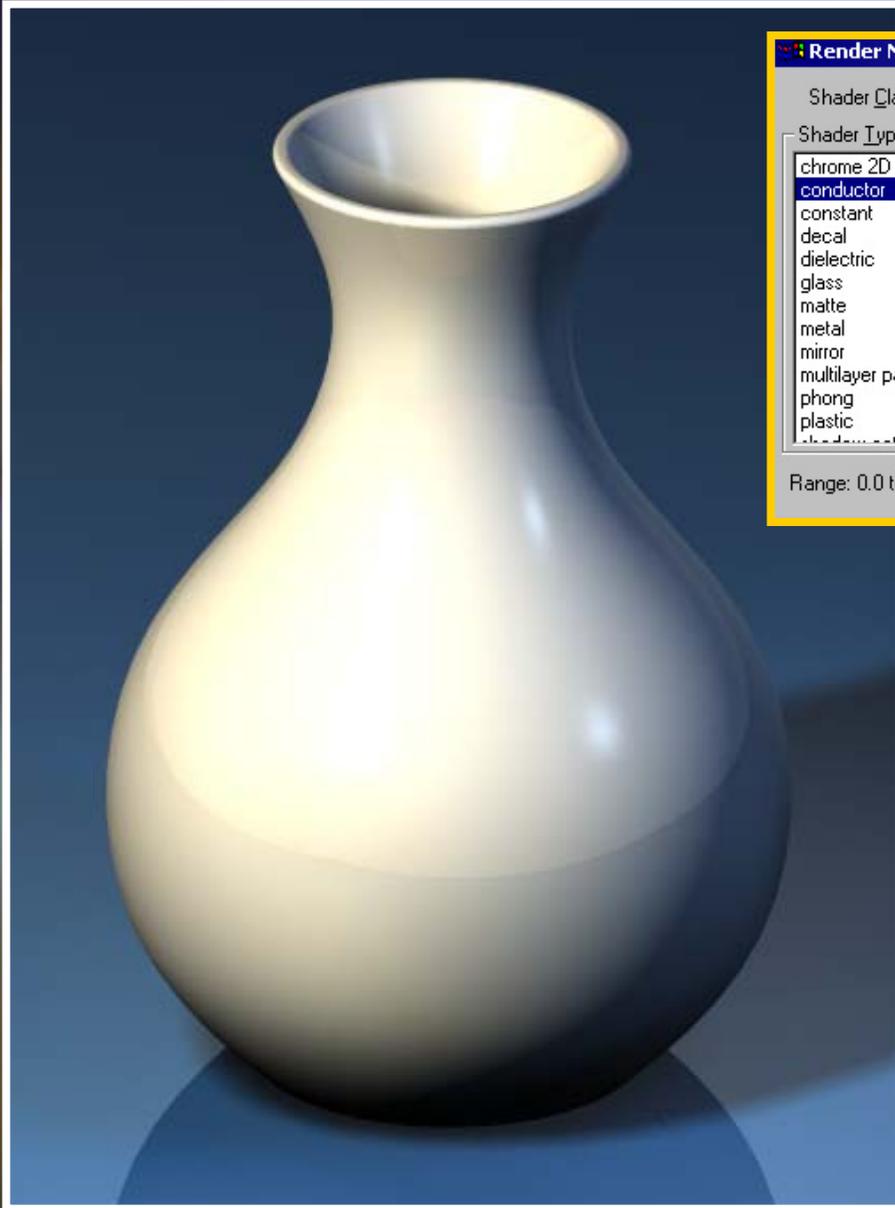


HIGH

Glatter oder unebener Plastik



Reflektierender Plastik



Mirror Factor

Metall – Basic Reflektion



Basic Aluminum

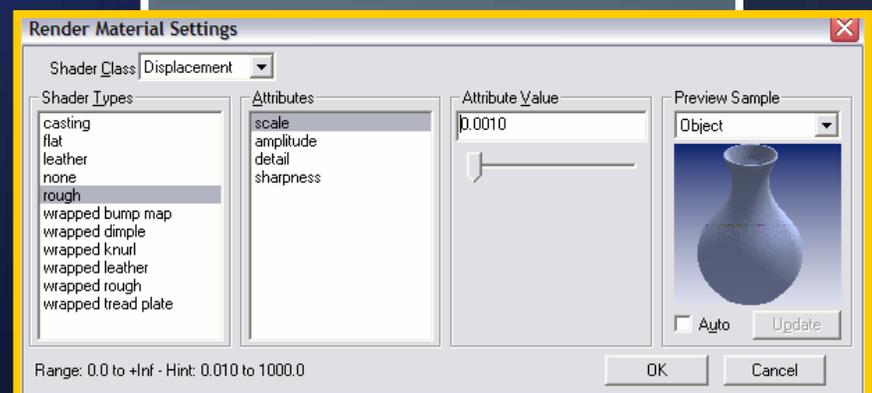
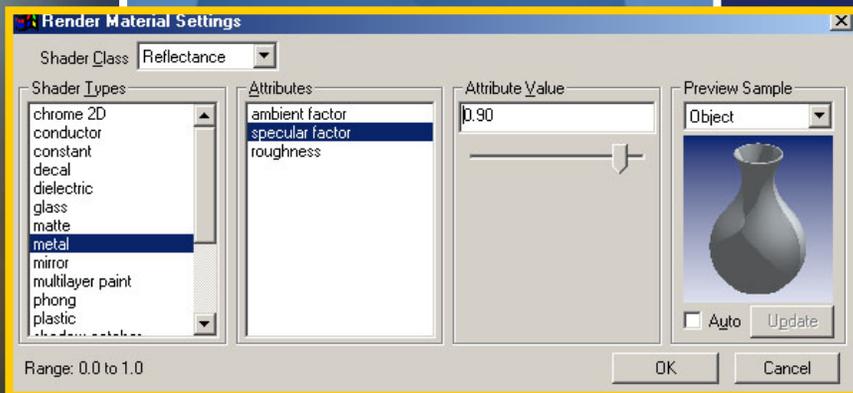
Ambience (.20)
Diffuse (1.0)
Specular (.60)
Mirror (.70)
Roughness (.02)



Gold or Brass

Ambience (.20)
Diffuse (1.0)
Specular (.60)
Mirror (.70)
Roughness (.02)

Metall – Unbehandelt oder Eloxier



Metal - Chrom



Render Material Settings

Shader Class: Reflectance

Shader Types: chrome 2D, conductor, constant, decal, dielectric, glass, malte, metal, mirror, multilayer paint, phong, plastic, ...

Attributes: ambient factor, diffuse factor, specular factor, mirror factor, roughness

Attribute Value: 0.0

Preview Sample: Object

Auto

Range: 0.0 to +Inf - Hint: 0.0 to 1.0

Glas

Index Refraction für gebräuchliche Materialien

Vacuum - 1.0	Ice - 1.309
Air - 1.0003	Emerald - 1.576
Water - 1.33	Ruby - 1.76
Glass - 1.5174	Sapphire - 1.76
Crystal Glass - 2.0	Opal - 1.45
Acrylic - 1.50	Iodine Crystal - 3.34
Clear Plastic - 1.46	Cubic Zirconia - 2.17
Quartz - 1.544	Diamond - 2.417



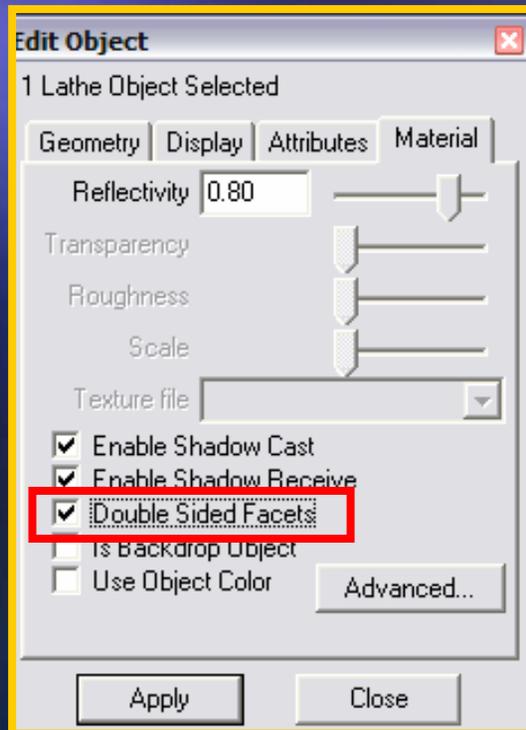
Basic Glas

Transmission (.93)
Refraction (1.5174)
Mirror (.15)
Specular (1.0)
Roughness (.003)



Crystal Glas

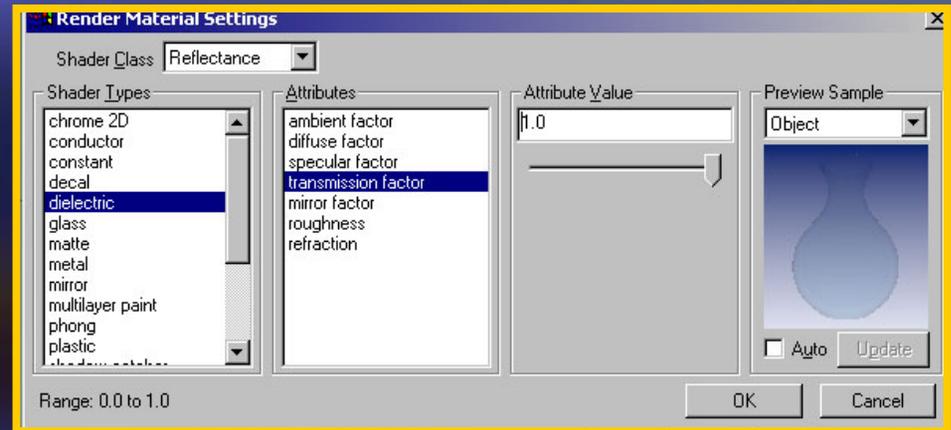
Transmission (1.0)
Refraction (2.0)
Mirror (.4)
Specular (2.5)
Roughness (.002)



Glas - Beispiel



Klarer Plastik



Acrylic

Transmission (1.0)

Refraction (1.4)

Mirror (.8)

Specular (1.0)

Roughness (.005)

Diffuse (1.0)

Ambience (1.0)



Image basierte Texturen – Brushed Metall



Image basierte Texturen – Holz

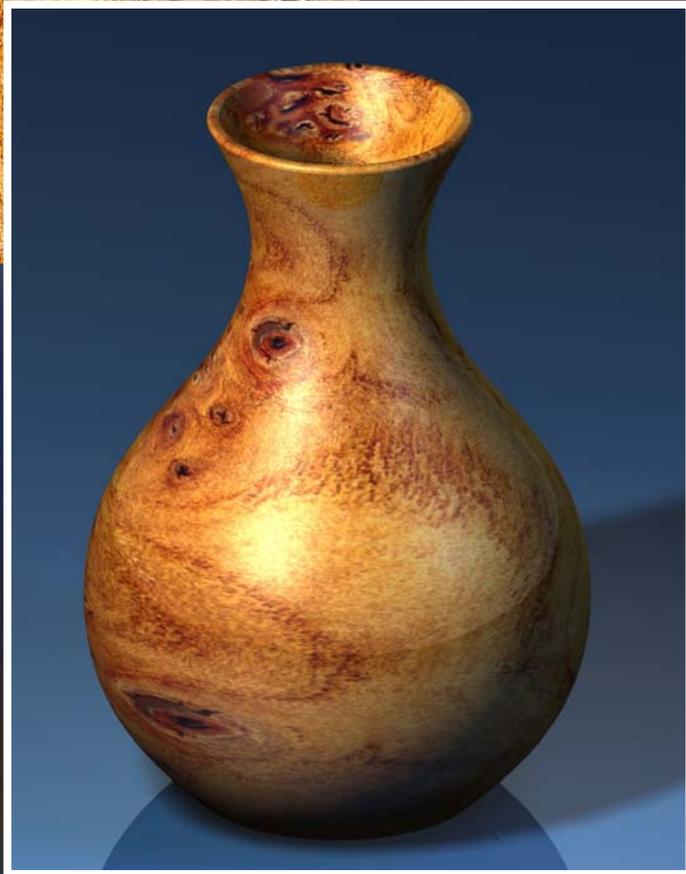


Image basierte Texturen – Marmor und Stein



Image basierte Texturen – Beispiel

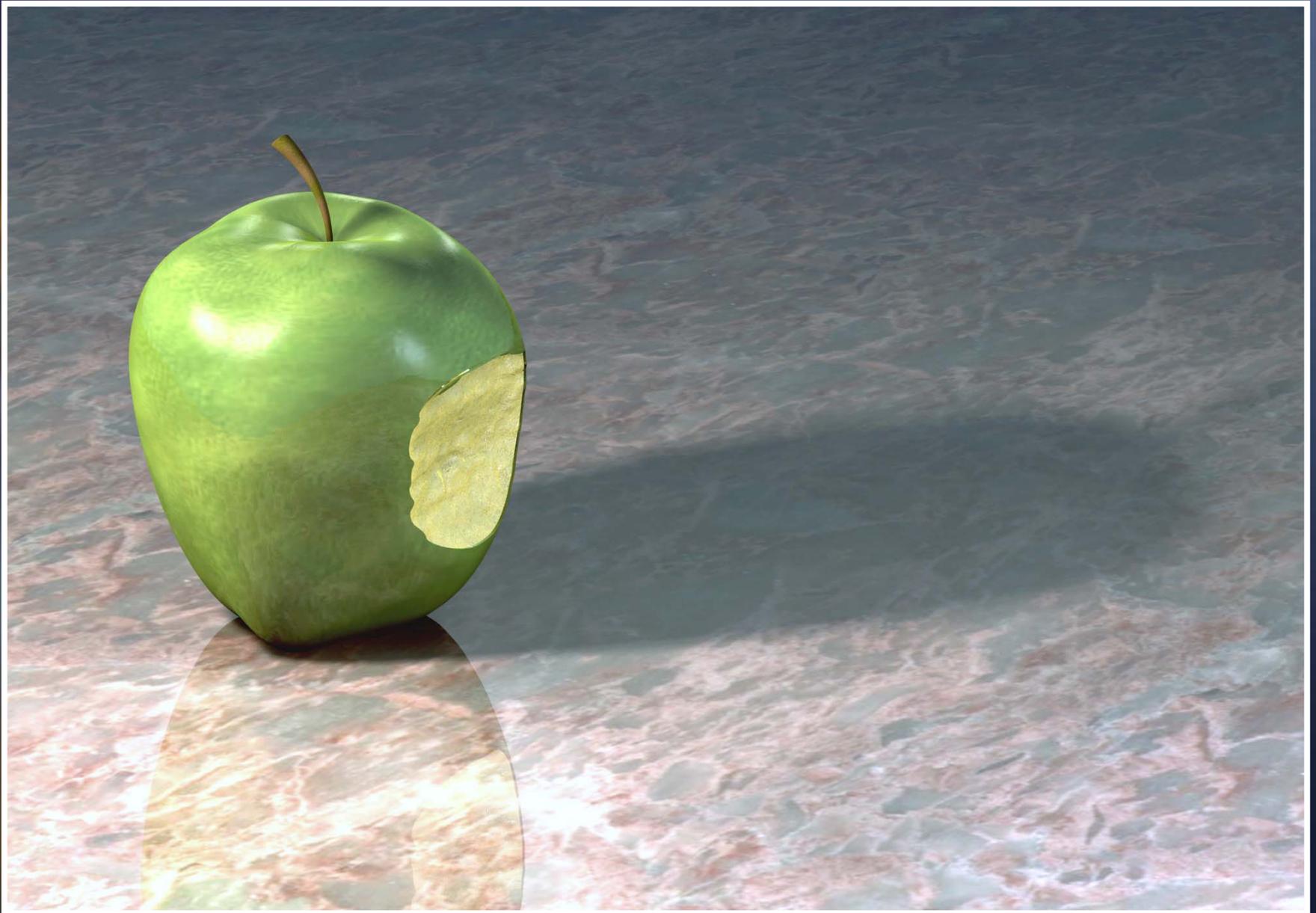
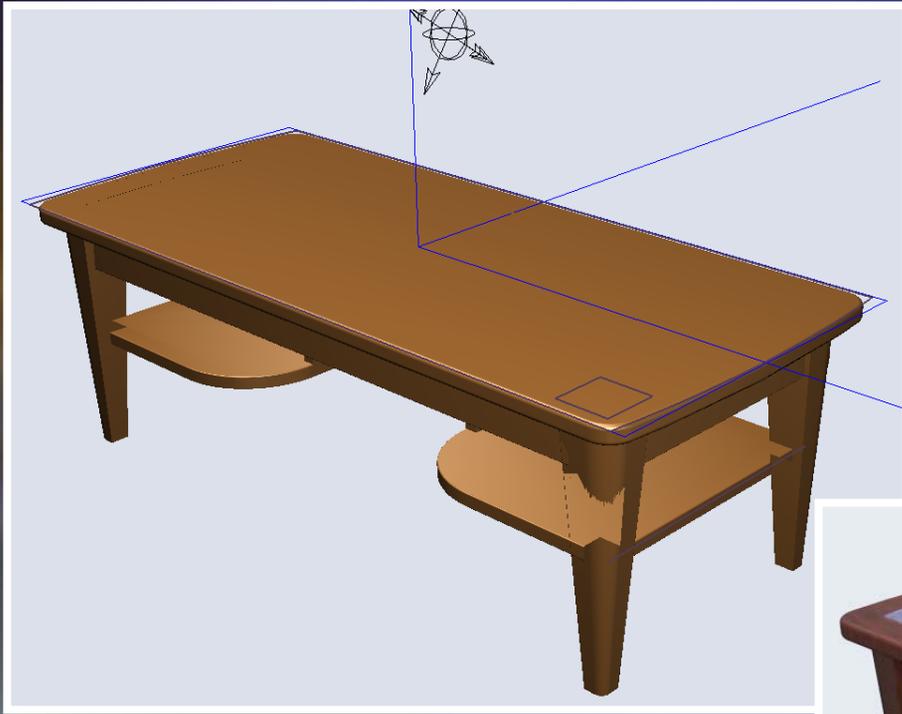


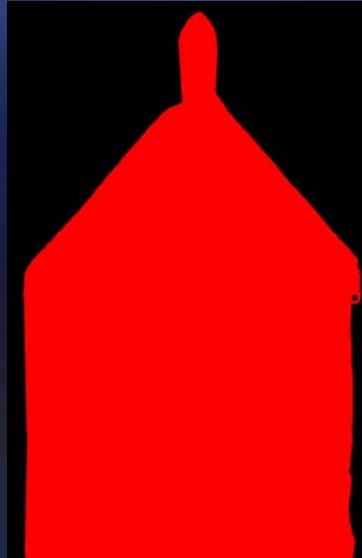
Image basierte Textures – Beispiel



Abbilder Decals



Abbilder Decals



**Erstellen Sie nun Ihre eigene
virtuelle photorealistische Welt
mit Cobalt Xenon und Argon**